CHARACTER AND PERSONALITY

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AN APPROACH TO THE MEASUREMENT OF INDIVIDUAL DIFFERENCES IN PERSONALITY*

LOUIS L. McQUITTY
University of Illinois

This study outlines an approach to the measurement of individual differences in personality. The approach was suggested by a gross observational comparison of mental hospital patients and college students. This comparison was refined by means of an original method of scaling and scoring the answers given to psychological inventories.

Historical Review

The Investigation of Individual Differences

Individual differences in various aspects of behavior were first noted by gross observational comparison of individuals. The observational comparisons were then refined by means of measurement techniques. The measurement techniques have involved the following assumptions:

(a) that a linear continuum exists;
(b) that tests or test-items can be allocated on the continuum, in graduated order, according to a defined principle; and
(c) that the tests or test-items can be used to allocate individuals along the continuum.

These assumptions are said to be justified, and the results obtained with the continuum are said to be psychologically significant, if:

(a) the results differentiate between individuals in a manner similar to that of another criterion (e.g., the observational comparison);
(b) two or more continua with different tests or test-items give similar results;
(c) the tests or test-items show internal consistency; and if
(d) the attribute or factor measured can be given psychological meaning.

* Thesis, accepted as partial fulfillment of requirements for the Ph.D. degree, the University of Toronto.

The present study followed procedures satisfying these criteria and applied them so as to combine fruitful characteristics of several inventory methods.

Inventory Methods

Three methods have been widely used in dealing with inventory answers. One method is illustrated in G. Stanley Hall's work with questionnaires.[1] In this method the number of times each answer is given by various groups of individuals is merely enumerated. No provision is made for assigning a composite score for several answers.

A second method is illustrated by Strong's work with the Vocational Interest Blank.[2] This method provides for the assigning of composite scores. The inventory is administered to groups of individuals. Various percentages of individuals in the groups give any one answer. These percentages are used in assigning a numerical value to each answer, and the numerical values are used in determining an individual's composite score. An individual's composite score is the sum of the numerical values of the answers which he gave. No restriction is put on the questions which may be included in the inventory. It makes possible a wide range of questions. But it makes no provision for assuring that the composite scores are measures of a single defined variable.

A third method is illustrated by Thurstone's work with attitude scales.[3] This method makes provision for assuring that the composite scores are measures of a "single, defined variable."[4] The definition of the variable exercises a selective influence on the questions[5] and is supported in this respect by a statistical criterion.[6]

None of these methods provide for individual differences in the subjective factor in answers. For example, each of two individuals may answer "yes" to a question; but the "yes" may mean far more for one individual than for the other individual.

[1] G. Stanley Hall, *Aspects of child life and education* (New York, 1921), pp. 1-52.

[2] Edward K. Strong, Jr., Procedure for scoring an interest test, *Psychol. Clin.*, 1930, **19**, 63-72.

[3] K. L. Thurstone and E. J. Chave, *The measurement of attitudes* (Chicago, 1929), pp. 1-65.

[4] S. N. F. Chant and G. R. Myers, An approach to the measurement of mental health, *Amer. J. Orthopsychiat.*, 1936, **1**, 134.

[5] Thurstone and Chave, *op. cit.*, pp. 11-14. [6] *Ibid.*, pp. 44-56.

The method described in this paper:

(a) makes provision for composite scores;
(b) makes possible the use of a wider range of questions;
(c) makes provision for assuring that the composite scores are measures of a single, defined variable; and
(d) makes provision for individual differences in the subjective factor in answers.

The Present Problem

In seeking a factor of significance in the field of personality measurement, the following preliminary assumptions were made:

(a) That individuals think, i.e., they see relationships between concepts. Some of these relationships mediate between objective concepts. They may be spoken of as objective relationships. Others mediate between the self concept and an objective concept. They may be spoken of as egocentric relationships, or simply as *egocentrics*.
(b) That there are individual differences in the interrelationships of egocentrics. This is especially obvious when the statements of mental hospital patients are compared with those of college students.

The investigation therefore concerned itself with the following problems: (1) to obtain a sample of the egocentrics of a number of individuals and (2) to measure the degree of interrelationship reflected in each individual's sample.

Problem (1) may be approached by asking individuals such questions as the following:

(a) Do you like, dislike, or are you indifferent to golf?
(b) Do you like, dislike, or are you indifferent to arguments?
(c) Do you like, dislike, or are you indifferent to foreigners?

An individual's answer to question (a) will usually be the equivalent of: I like golf; I dislike golf; or I am indifferent to golf. Each of these possibilities involves the concepts "I" and "golf"; and a relationship—"like," "dislike," or "am indifferent to"—is affirmed. The particular answers given to questions (a), (b), or (c) may therefore be regarded as egocentric relationships.

In order to obtain a more comprehensive sample of an individual's answers, or egocentric relationships, an inventory of many questions may be administered.

Problem (2). Having obtained a sample of answers given by a group of individuals, the next step is to measure the interrelationships among the answers in a manner that will give comparable scores for the individuals of the group. For this purpose, let us consider the answers, or egocentric relationships, for any two ques-

tions. The possible pairs of answers to questions (a) and (b) above are:

i. I like golf, and I like arguments.
ii. I like golf, and I dislike arguments.
iii. I like golf, and I am indifferent to arguments.
iv. I dislike golf, and I like arguments.
v. I dislike golf, and I dislike arguments.
vi. I dislike golf, and I am indifferent to arguments.
vii. I am indifferent to golf, and I like arguments.
viii. I am indifferent to golf, and I dislike arguments.
ix. I am indifferent to golf, and I am indifferent to arguments.

Suppose now that these pairs of answers have been obtained by administering questions (a) and (b) to a group of individuals. The relationship between the answers of a pair may be regarded as *concomitance,* in the sense that concomitance will be maximal if each individual who gave one answer of the pair gave also the other answer. Concomitance will be less to the extent that some individuals gave one answer of the pair and not the other. On this basis, a coefficient of the degree of relationship may be computed for each pair of answers. These coefficients may be spoken of as *concomitance indices.* They may be used to determine the interrelationship of the answers given by any individual, i.e., a measure of the interrelationship of his egocentrics.[7]

If pairs of questions are to be used in determining individual differences of the kind outlined above, some pairs may be more suitable than others. The following considerations will illustrate this: (a) Do you like (dislike, etc.) driving a motor car? (b) Do like (dislike, etc.) driving an automobile? These questions, involving the synonyms "motor car" and "automobile," are so similar that most, if not all, individuals would interpret them alike. Question (b) would involve the same egocentric relationship as question (a). The same could be said of a pair of questions involving antonyms. Accordingly, a mathematical formula was devised for eliminating pairs which approach this inefficient condition.[8]

Having outlined the logic of the search and a method of procedure, we now pass to the experimental study of the factor.

[7] The details of these techniques are reported in the Appendix, pp. 91ff.
[8] The development of the formula and a study of its utility are reported in the Appendix, pp. 92ff.

Experimental Study of the Factor

The experimental study concerned itself with two problems: (a) demonstration and breadth of the factor and (b) an indication that the factor may be significant in differentiating between college students and mental hospital patients.

For the demonstration and a study of the breadth of the factor, two widely different inventories were selected, namely (a) the Strong Vocational Interest Blank* and (b) the Bernreuter Personality Inventory.* The Strong Blank contains eight groups of questions. Five of these are designed to indicate interest in the following fields: Occupations, Amusements, School Subjects, Activities, and Peculiarities of People; and these groups were employed in the present investigation.

The directions for the several groups are similar or identical. The directions and first few items of Group I, Occupations, are as follows:

Indicate after each occupation listed below whether you would like that kind of work or not. Disregard consideration of salary, social standing, future advancement, etc. Consider only whether you would like to do what is involved in the occupation.

Draw a circle around L if you like that kind of work.

Draw a circle around I if you are indifferent to that kind of work.

Draw a circle around D if you dislike that kind of work.

Work rapidly. Your first impressions are desired here. Answer all the items. Many of the seemingly trivial and irrelevant items are very useful in diagnosing your real attitude.

(1) Actor (not movie) ...	L	I	D	Lawyer, criminal	L	I	D
(2) Advertiser	L	I	D	Lawyer, corporation	L	I	D
(3) Architect	L	I	D	Librarian	L	I	D
(4) Army	L	I	D	Life insurance salesman ..	L	I	D
(5) Artist	L	I	D	Locomotive engineer	L	I	D

The directions and first few questions of the Bernreuter Inventory are as follows:

The questions on this blank are intended to indicate your interests and attitudes. It is not an intelligence test, nor are there any right or wrong answers.

In front of each question you will find: Yes No ?.

If your answer is "Yes," draw a circle around the "Yes." If your answer is "No," draw a circle around the "No." If you are entirely unable to answer either "Yes" or "No" to the question, then draw a circle around the question mark.

* Permission to use quotations from E. K. Strong's *Vocational Interest Blank* and R. G. Bernreuter's *Personality Inventory* has been granted by the authors and their publisher, the Stanford University Press.

1. Yes No ? Does it make you uncomfortable to be "different" or unconventional?
2. Yes No ? Do you daydream frequently?
3. Yes No ? Do you usually work things out for yourself rather than get someone to show you?
4. Yes No ? Have you ever crossed the street to avoid meeting some person?
5. Yes No ? Can you stand criticism without feeling hurt?

Two hundred and sixty-two Strong Blanks and 262 Bernreuter Inventories were taken at random from the files in the Department of Psychology at the University of Florida. The files contained all the Blanks and Inventories which had been administered to second-year male students during the period September, 1929, to January, 1936.

These results were used in computing *concomitance indices* (see above, p. 84) for pairs of answers. All possible pairs of answers were not considered, since the necessary work would have been unduly laborious. An alternative plan was to use many questions and to compute *indices* for a selected number of pairs of answers to these questions. This plan was adopted because, by taking many questions, the range of egocentrics sampled was greater than if only a few questions had been used. The pairs of answers selected were those which pertain to questions (1, 2), (2, 3), (3, 4), etc., for both the Strong Blank and the Bernreuter Inventory.

In order to lessen the work still further, not all questions on the inventories were used. Those used include the first 36 of each of the first 6-parts from the Blank—giving a total of 216—and the first 73 from the Inventory. These were subjected to the criterion for eliminating the less suitable questions (see Appendix, p. 92). This left 108 of the 216 questions from the Blank and all of the 73 questions from the Inventory.

In this connection, it is interesting to note that the criterion for the elimination of less suitable pairs acts in accord with the theory by which it was created. This is demonstrated by reference to several illustrative pairs of questions. Below are listed from each group of interests on the Blank (a) the two pairs of questions with the highest values for the criterion, i.e., the poorest pairs, (b) the two pairs of questions with lowest values for the criterion, i.e., the best pairs, and (c) the value of the criterion for each pair. The question in each case is: "Do you like, dislike, or are you indifferent to. . . ?"

Value of Criterion	Good Pairs	Value of Criterion	Poor Pairs
0.02	Editor Electrical engineer	3.25	Locomotive engineer Machinist
0.02	Life insurance salesman Locomotive engineer	3.17	Marine engineer Mechanical engineer
0.10	Billiards Observing birds (nature study)	3.50	Picnics Excursions
0.06	Musical comedy Symphony concert	3.45	Art galleries Museums
0.04	Literature Mathematics	2.46	Geography Geology
0.01	Public speaking Shop work	2.58	Manual training Mechanical drawing
0.10	Pursuing bandits in a sheriff's posse Doing research work	2.88	Adjusting a carburetor Repairing electrical wiring
0.06	Doing research work Acting as a cheer-leader	2.88	Raising flowers and vegetables Decorating a room with flowers
0.07	Quick-tempered people Optimists	2.74	Very old people Cripples
0.07	Side-show freaks People with good teeth	3.13	Blind people Deaf mutes

It will be noted that the two members of each poor pair are very similar. Hence these pairs resemble the automobile—motor-car illustration discussed earlier.

Pairs for the measurement of concomitance having been selected and their concomitance indices having been determined, Blanks and Inventories were administered (a) to an introductory psychology class of 47 male students at the University of Florida and (b) 36 mental hospital patients. The patients included 13 paretics and 14 schizophrenics in the Ontario Hospital, Toronto, and 5 schizophrenics and 4 manic-depressive psychotics in the Toronto Psychiatric Hospital. With students and patients, one week elapsed between the administration of the Strong Blanks and the Bernreuter Inventories.

The Strong Blanks and the Bernreuter Inventories were scored to obtain concomitance scores for each. These scores were com-

puted in such a manner (a) as to be comparable for all individuals and (b) so as to provide for individual differences in the subjective factor of answers (see p. 82).[9] It will be remembered that these scores derived from the concomitance of answers to questions, are accepted as measures of the interrelationships of egocentrics. For each pair of questions there are nine possible answers, and accordingly nine concomitance indices, since each question requests the answers L, I, D or Yes, No, ?.

The scores for college students and for mental hospital patients are shown in Table 1.

TABLE 1. SCORES OF CONCOMITANCE FOR MENTAL HOSPITAL PATIENTS AND COLLEGE STUDENTS

The Bernreuter Personality Inventory			The Strong Vocational Interest Blanks		
Scores of Concomitance	Frequency of Mental Patients	Frequency of College Students	Scores of Concomitance	Frequency of Mental Patients	Frequency of College Students
4.15-2.54	1		2.30-2.49	1	
3.75-4.14	2		2.10-2.29	2	
3.35-3.74	3		1.90-2.09	1	
2.95-3.34			1.70-1.89	5	
2.55-2.94	1		1.50-1.69		
2.15-2.54	4		1.30-1.49	5	
1.75-2.14	9	1	1.10-1.29	3	1
1.35-1.74	6	1	0.90-1.09	3	
0.95-1.34	4	1	0.70-0.89	2	2
0.55-1.94	4	5	0.50-0.69	5	1
0.15-0.54	2	10	0.30-0.49	1	7
-0.25-0.14		7	0.10-0.29	2	6
-0.65-0.26		11	-0.10-0.09	4	13
-1.05-0.66		8	-0.30-0.11	2	9
-1.45-1.06		3	-0.50-0.31		4
			-0.70-0.51		1
			-0.90-0.71		2
			-1.10-0.91		0
			-1.30-1.11		1
Totals	36	47	*Totals*	36	47

It will be noted that the college students' scores are comparatively low, indicating high concomitance, i.e., well-interrelated egocentrics, and that the mental hospital patients' scores are comparatively high, indicating low concomitance, i.e., uninterrelated egocentrics.

This degree of differentiation was obtained with tests of concomitance which admit of much improvement. A criterion for obtaining improvement has here been developed (see above, p. 84). That an improved test of concomitance would give greater differen-

[9] The details and significance of this computation are reported in the Appendix, pp. 95f.

tiation between the two groups is demonstrated because of the following facts:

(a) Fewer Inventory questions were used than Blank questions, namely, 73 and 108 respectively.

(b) The criterion for pairs of questions is better satisfied with the Inventory than with the Blank, i.e., the Inventory is the better test of concomitance.

(c) The Inventory concomitance scores give greater differentiation between the groups than do the Blank concomitance scores.

The above findings suggest, therefore, that the factor, concomitance, has practical significance because it may be used to differentiate between groups of individuals.

The correlation between Bernreuter Inventory concomitance scores and Strong Blank concomitance scores was found to be 0.63 ± 0.04. This demonstrates that concomitance as a factor is common to two widely different inventories. It may be common to a great variety of inventories and may possibly be expressed in a very broad range of behavior.

Interpretation of the Factor

The following tentative interpretation of the factor under consideration is suggested: Intelligence may be interpreted in terms of seeing relationships between objects of thought. In tests of intelligence, relationships between concepts are usually involved. But in these tests, the "concepts" between which the relationships mediate are usually, if not invariable, different from those involved in the inventories used in this study. The inventory questions and answers invariably involved the personal concept "I." In accord with this, the factor here demonstrated is said to be a factor of individual differences in *personality.*

Intelligence tests may be thought of as tests of the manner in which individuals interrelate "objective" concepts. Tests of concomitance may be thought of as in some way referring to the manner in which the individual's "personal" or "self" concept is related within his scheme of "objective" concepts. Thus, relating A to B would come under the function of "intelligence." The fact that an individual *likes* A, *dislikes* B, etc., would, in their relationship, involve the personality characteristic here called concomitance. If this or any analogous interpretation of the facts is proceeding in a legitimate direction, tests of concomitance, when refined, might prove to be very worthwhile instruments of research. It is pos-

sible that questions for the measurement of concomitance could be standardized on children. Genetic studies of childrens' adjustment to their environment—studies in which concomitance measures were included—would then give a much richer basis for exploring and interpreting this factor further.

Reliability of Questions—A Possible Further Investigation

An important further investigation would appear to be the following: All questions could be repeated, and measures of reliability computed by means of the methods outlined in this paper. The questions could be repeated for purposes other than the determination of statistical reliability. Assuming, as was done in this investigation, that these questions investigate an individual's egocentrics; by repeating them, it should be possible to investigate the constancy of those egocentrics. It is not necessary to assume, as is so commonly done, that the answer to a question is unlawful and meaningless just because the same answer does not again occur when the question is repeated to the same individual. The question cannot be repeated under "identical" conditions, not perhaps to the same person, for time has changed, and perhaps also the person.

The repetition of questions to investigate the constancy of egocentrics would be an interesting elaboration of this investigation. From a gross observational comparison of paranoids, manic-depressive (manic phase) psychotics, and college students, it would appear that the first two not only differ from the latter in the degree of interrelationship among their egocentrics, but that also the first two differ from each other in degree of constancy of their egocentrics. It is true that college students might differ from each other in the same manner. It is supposedly possible for an individual to have (a) highly interrelated and rapidly changing egocentrics; (b) highly interrelated and slowly changing egocentrics; (c) relatively uninterrelated and rapidly changing egocentrics; or (d) relatively uninterrelated and slowly changing egocentrics. These possibilities could readily be investigated on the basis of the technique herein discussed.

Summary

This investigation began with the following assumptions:

(a) That individuals think, i.e., they see relationships between concepts. Some of these relationships mediate between objective concepts. These may be spoken of as objective relationships. Others

mediate between the self concept and an objective concept. They may be spoken of as egocentric relationships, or simply as egocentrics.

(b) That there are individual differences in the interrelationships of egocentrics. This is especially obvious when the statements of mental hospital patients are compared with those of college students.

(c) That a sample of an individual's egocentrics could be obtained by asking him questions.

(d) That the degree of interrelationship of an individual's egocentrics would be reflected in the degree of concomitance of his answers.

Individual differences were demonstrated in the concomitance of answers to questions. An individual's concomitance of answers on one inventory was demonstrated to be similar to his concomitance of answers on another quite different inventory. A criterion for the construction of an efficient test of concomitance was developed and demonstrated to be useful for that purpose. Concomitance was shown to be a significant factor in that (a) an inefficient test of it was demonstrated to differentiate between college students and mental hospital patients and (b) a more efficient test gave greater differentiation between the groups.

A tentative psychological interpretation of the concomitance factor was offered, and a few of the possible further lines of investigation were suggested.

Appendix

First Method

In order to obtain a coefficient of the degree of interrelationship of pairs of answers, here called concomitance (see above, p. 84), let:

nx = the number of individuals who gave one answer x of a pair of answers x and y (either like—like, like—dislike, like—indifferent, dislike—like, dislike—dislike, dislike—indifferent, indifferent—like, indifferent—dislike, or indifferent—indifferent) to a pair of questions, each beginning with "Do you like, dislike, or are you indifferent to. . . ?"

ny = the number of individuals who gave the other answer y of the pair.

nxy = the number of individuals who gave both answers x and y.

Let Cxy be the concomitance between answers x and y.

It will be seen that Cxy is related to $\frac{nxy}{nx}$ and to $\frac{nxy}{ny}$. Cxy is taken as being a function of the geometric mean between $\frac{nxy}{nx}$ and $\frac{nxy}{ny}$. We may accordingly state that

$$Cxy = f \frac{nxy}{\sqrt{nx \cdot ny}}$$

The functional relation involved in this equation is assumed to be that of a normal probability curve. The equation then makes possible the scaling of each pair of answers according to the degree of concomitance; for nx, ny, and nxy are empirically determinable values. The following steps are involved:

(a) Determine nx, ny, nxy empirically for a given pair of answers.
(b) Compute the value $\frac{nxy}{\sqrt{nx \cdot ny}}$
(c) With this value as the ordinate of a normal probability curve, look up the corresponding standard deviation in a table. (Use a table in which the maximal ordinate is unity.) The standard deviation is the required value, i.e., Cxy, the scale value of concomitance for the pair.[10]

In this manner the scale values of all possible pairs of answers, obtained by administering a long list of questions to a group of individuals, may be calculated.

When this has been done, the scale values may be employed in determining the degree of concomitance reflected in the answers (the egocentrics) of any given individual. In order to do this:

(a) Consider the answers given by an individual to the questions of the inventory.
(b) Consider every possible pair of these answers. Each pair of answers has a scale value.
(c) Compute an average of the scale values. This average is here accepted as the individual's measure of concomitance. It is regarded as a measure of the interrelationships among his egocentrics.

Elimination of Inefficient Pairs

If pairs of questions are to be used in determining individual differences of the kind outlined above, pairs involving synonyms or antonyms will be inefficient (see above, p. 84). Pairs approaching either of these conditions can be eliminated as follows: Consider a pair of synonyms (a) and (b), each preceded by the question: "Do you like, dislike or are you indifferent to. . . ." Only the following pairs of answers would be likely to occur: like (a) and like (b); dislike (a) and dislike (b); indifferent to (a) and indifferent to (b).

[10] The ordinate of a normal probability curve never equals zero. Consequently, there is no standard deviation, no scale value, stated for a zero ordinate. It was necessary to select one. 3.5 was selected, for the following reasons: (1) The value selected must be larger than the maximum for any case where $\frac{nxy}{\sqrt{nx \cdot ny}} > 0$. (2) The maximum in this study is 3.09. (3) It must be small enough so as not to weigh unduly any individual's composite score. (4) The average scale value plus 4 P. E. of subjects (some of the mental patients) who gave one or more pairs scaling at 3.5 is approximately 3.5; which means that 3.5 is not unduly large.

These pairs of answers would probably have maximal concomitance, for each individual who gave one answer to any pair would be likely also to give the other. The "not given" pairs of answers [e.g., like (a) and dislike (b)] would probably have a minimal concomitance, for no individual who gave one answer of such a pair would be likely to give the other.

A mathematical formula was accordingly developed for measuring the extent to which pairs of questions approach the conditions indicated above. It is called "A Criterion for the Elimination of Inefficient Pairs," and is outlined as follows:

Let LL = scale value of *like a* - *like b* answers.
Let LD = scale value of *like a* - *dislike b* answers.
Let DD = scale value of *dislike a* - *dislike b* answers.
Let DL = scale value of *dislike a* - *like b* answers.

Then:

In the case of synonyms:

LL + DD = maximal concomitance, represented by a minimal numerical scale value of 0.00.

LD + DL = minimal concomitance, represented by a maximal numerical scale value of 7.00.

In the case of antonyms:

LD + DD = minimal concomitance, represented by a maximal numerical scale value of 7.00.

LD + DL = maximal concomitance, represented by a minimal numerical scale value of 0.00.

In either case:

LL + DD — LD — DL = a maximum numerical value, + 7.00 in the case of synonyms, — 7.00 in the case of antonyms. The criterion is completely satisfied, and the pair of questions a good pair, when the numerical value is zero. It is in general less satisfied, and the pair of questions a poorer pair, as the numerical value is larger.

This criterion was tested in the following manner: Its numerical value was determined for each of the pairs of questions from the Strong Blank (see above, p. 86). On the basis of these values, the pairs of questions were divided into four tests. *Test One* contains the 18 pairs having the smallest values. *Test Two* contains the 36 pairs having the next smallest values. *Test Three* contains the 54 pairs having the next smallest values. *Test Four* contains the 72 pairs having the next smallest values.

Each of forty-seven Strong Blanks (administered to college students) were scored four times, once for each of the four tests. Each

test was scored as outlined above (p. 92) save that all possible pairs of answers were not considered (see above, p. 86).

The first order correlation coefficients and the factor loadings by the Thurstone technique[11] were calculated. Their values are shown in Table 2.

TABLE 2. CORRELATION COEFFICIENTS AND FACTOR LOADINGS

	Test One	Test Two	Test Three	Test Four
Test One		0.46	0.24	0.24
Test Two	0.46		0.43	0.23
Test Three	0.24	0.43		0.36
Test Four	0.24	0.23	0.36	
Factor Loadings	0.59	0.67	0.62	0.50
Average Values of the Criterion for the Elimination of Pairs	0.08	0.29	0.68	1.42

The table also shows the average value of the criterion for each test.

Refined Method

Further scoring involved the inclusion of mental hospital patients (see above, p. 87). The inclusion of mental hospital patients suggested a further refinement of the method of obtaining an individual's average score of concomitance. This method was developed and adopted. It was designed to take care of the possibility that there may be individual differences in *how much* a person "likes" before he will say: "I like. . . ." Similarly for "dislike," etc. Perhaps this is illustrated by the fact that some individuals give many more "like" answers than do other individuals. If this be a correct interpretation, it would seem that only individuals who give the same number of like—like pairs of answers are directly comparable in like—like concomitance scores. Similarly for like—dislike, like—indifferent, dislike—like, etc., pairs.

To allow for individual differences of the kind just outlined, concomitance scores may be obtained in the following manner:

1. Determine the mean of each individual's scale value (p. 92) for like—like pairs of answers.
2. Each individual's mean is to be compared first with those who gave the same number of like—like pairs as did he. Use only the means for these pairs and state each individual's mean in standard score form.
3. Repeat steps 1 and 2 for all other pairs, i.e., like—dislike, like—indifferent, dislike—like, etc. This will give nine standard scores for each individual.

[11] L. L. Thurstone, *The vectors of mind* (Chicago, 1935), pp. 224-228.

4. Weigh each standard score according to the number of scale values involved in it.
5. Take the mean of these nine weighted scores for each individual. This gives a single, comparable, composite score for each individual.

This refined method of scoring, designed to provide for individual difference in the subjective factor of answers, was evaluated in the following manner: Strong Blanks and Bernreuter Inventories were each scored for concomitance by two methods, first by the method of simple averages (p. 92), second by the refined method. Strong Blank concomitance scores and Bernreuter Inventory concomitance scores by the first method of scoring gave a coefficient of correlation of 0.00. By the refined method of scoring for concomitance, they gave a coefficient of 0.63 ± 0.04. These results indicate that the refined method is the more significant measure of concomitance, because it discovers relationships not indicated by the first method.

THE RELATIONS INVOLVED IN BEHAVIOUR

FRANCIS AVELING
University of London

We judge a person's character by observing his behaviour, discovering the goals at which he appears to aim, and the means he adopts to secure them. In this sense one could speak of the character of animals other than man also, and especially of the higher mammals; for, though there is far greater uniformity in their behaviour, there is enough flexibility to distinguish one member of a species from another.

In the following paper I propose to attempt an analysis of several examples of human conduct and subhuman behaviour with a view to laying bare their chief mental implications.

Let us, in the first place, consider some very simple action, such as stretching out one's hand, pouring water from a jug into a glass, and raising it to drink. If I do this myself, I can find on introspection a desire for water, either awakened by actual thirst (the sign of a biological need) or merely suggested by the sight of the water as an agreeable though not necessary beverage; the anticipation of the quenching of my thirst by the draught or of the pleasure of sipping water (a result of previous experience); what has been called an "objective" relation between the desire and the goal, or satisfaction of the desire, at which I consciously aim; and a series of changing causal, spatial, and temporal relations (as well as a stable attributive one) as the position of several moveable parts of my body alters, until, after having quaffed the water, I set the glass down with satisfaction. I believe that, in principle, this simple analysis gives a typical pattern of all conduct and behaviour, no matter how complicated, whether instinctive or impulsive, or deliberate and intentional. Fundamentally, there is a desire, a goal, and consciously experienced relations.

What I find for myself on introspection, I can believe to be true of others in similar conditions. Nevertheless, as I have stated it, the analysis is too simple, and, indeed, too abstract. For the desire

is *mine,* the goal is one *I* intend to reach, the relations are apprehended by *me,* the satisfaction is *mine,* as, in fact, is the entire action. The Prince of Denmark cannot with impunity be left out of the play; and, indeed, is not; because, while many of the elements analyzed out of the action are, and possibly all may be, sensorial, in the particular case under examination, there is the further immediate awareness of the Self as an agent. What this awareness may be requires further analysis, and will be considered later.

Let us now descend to one of the lower levels of the evolutionary scale to consider the behaviour, reported by Jennings, of the unicellular animal Stentor reacting to irritant particles of carmine or sepia. The creature reverses the sweep of ciliary processes that normally drive food particles into its "mouth," it contracts on its stem, it breaks away from its moorings and swims off. This is said to be an avoiding reaction. It might as well be described ecologically as a seeking one. In any event, Stentor's behaviour seems to present an exact parallel to the type pattern already discussed. There is the biological need (which *may* be experienced as desire) to secure its appropriate environmental niche. There is anticipation of success indicated in its successive reaction trials. There is a relation between the need and the goal; and there are changing causal, temporal, and spatial relations, while the little unicellular animal first unsuccessfully, and finally successfully, copes with the unusual situation.

Ascend the evolutionary ladder again until you come to the anthropoid apes whose behavior was studied by Köhler. One example here will suffice. The most "intelligent" of these chimpanzees, Sultan, we are told, when faced with the problem of drawing a banana into his cage when he had no single stick long enough to reach it, pushed one bamboo cane in line with a second until the latter actually touched the fruit. Had the two canes stuck together the practical problem was solved. But unhappily they did not join up. Nevertheless, theoretically the solution was there in principle, though several of the relations necessary for its completeness (such as the rigid jointure of the bamboos) were seemingly not apprehended. And when, afterwards, the ape by chance fitted the end of one bamboo into the butt of another, he at once used the lengthened stick as a tool with which to reach the fruit and drag it into the cage. Here, again, we have an illustration of the same pattern. Desire, goal, anticipation, causal, spatial and temporal relations: what, in fine, the Gestalt psychologists call "closure," or

the filling of a gap between the desire and the secured end, but may (better perhaps) be described as the emergence of relations relevant to the guidance of action towards the end desired.

Descend once more to an illustration from the behaviour of an insect. The solitary wasp prepares a nest, goes in search of prey with which to provision it for her young, finds a suitable animal, stings it, brings it back to the nest, which she herself enters before placing the caterpillar, spider, or grasshopper within, and laying her egg upon it. This ritual is instanced by Fabre and the Peckhams as the ordinary routine of the wasp; and there are several most interesting results from interference with it, though with these we are not here concerned. But we are concerned with the "desire," the need for the performance of a particular set of actions at a definite time, the anticipation of satisfaction (which may never previously have been experienced), the relation between the "desiring" wasp and the goal, the attainment of which satisfies it, and the changing causal, temporal, and spatial relations which must be realized in order that the biological goal should be secured.

These instances, and they might be multiplied indefinitely, including the migrations of birds and fishes, the homing behaviour of animals as low in the scale of life as limpets, and even the behavioural artifacts of laboratory experimentation with salamanders and tadpoles, can all be fitted without distortion into the same scheme, and so illustrate in their various ways the same pattern.

It will now be in order to examine this matter more closely. Psychologists have distinguished instinct from intellect, though they have not commonly given great precision to either of these terms. I propose to use "instinct," in McDougall's sense, to denote that principle of behaviour which issues in an action, or a tendency to action, in the presence of a situation or stimulus which has biological significance for the creature acting "instinctively"; and this will imply some sort of awareness of the situation or stimulus itself, as well as some sort of a feeling tone (or emotion) in its respect. And I propose to denote by "intellect" the principle, faculty, ability, or power to grasp relations abstractly and so deal with them. Used thus, both instinct and intellect will include awareness of relations; but there is a difference between the instinctive and the intellectual manner of apprehending them. To make use of Spearman's distinction, one is the "as," the other the "that" manner; and both are commonplaces of human experience. We may perceive two related items such as a light and a dark grey without explicitly educing the

relation of difference between them; the relation then remains implicitly "tied" to its fundaments. That animals other than human may perceive relations in this way also is shown by experiments with hens and other creatures in which, after being trained to go to the lighter of the two for their food, both the greys are "stepped up" in brightness value, so that what formerly was the darker now has the value of the previously lighter grey. In this situation it is found that the animal, instead of going to the grey to which it was trained, goes to the lighter of the new pair. This indicates that the two greys are perceived *in relation,* and that the relation, rather than the absolute nature of the fundaments, determines the animal's behaviour. Again, like Köhler's apes, as was shown by their efforts to obtain and eat it, we may perceive a fruit "as" something edible; and this manner of apprehending relations would appear to be enough to explain their behavior. But, on the other hand, we may abstract the relation of difference in brightness, or the edibility of the fruit, and the like, hold them separately in mind, give them names, and make use of them in further abstract mental processes.

This distinction seems to me to be fundamental. But how does it help us in the analysis we are trying to make? What sort of mentality is implied in animal behaviour and human conduct? I think we may reasonably say that a very great part of human action proceeds in exactly the same way as animal behaviour and that only certain of the activities of men deserve to be called specifically "human." Like other animals we often act instinctively, driven by an impulse unleashed by some biologically significant stimulus. In such cases the impulse itself sets going and maintains a conation or striving towards a goal, which operates through the executive mechanisms of the body until the goal is reached or frustration intervenes. Here the sequence of events is some sort of apprehension of a significant goal, a felt impulse, conation, sensations of movement, and experience of satisfaction, or emotional frustration. Among other characteristics of instinctive behaviour one peculiarity is that on its first appearance it is practically adequate for its purpose; there has been no previous experience, and it does not have to be learned. Yet even such behaviour clearly seems to involve some grasp of, and guidance by, relations and, moreover, of relations relevant to the situation. In building her first nest, the bird does not randomly carry the materials she selects now to one place, now to another. She does not select any kind of material, but material in nature, shape and size suitable for nest-building. She seems to

have a plan; and all plans are relational. Somehow or other appropriate relations lead her to her goal. They are the means to the end of nest-building. But, so far as mentality is implied in her behaviour, there is no need to suppose that it involves any kind of abstractive thought. The whole can be adequately explained in terms of sensory process and "as," or tied, causal, temporal, spatial, attributive, and summative relations. What is noteworthy, however, is that these relations are relevant to the bird's purpose of nest-building, even on the occasion of its first exercise. This fact indicates evidently the power of sensory judgement. There is often improvement also in the building of subsequent nests, which points to the memorial influence of prior experience.

This examination of an "instinctive" activity may suffice to cover all comparable behavior; and, since we ourselves experience the exercise of similar activities, we are justified in supposing also that other animals may.

But what has been said harks back to a very ancient doctrine, though it is certainly none the worse for its antiquity. The reader will appreciate that the internal, or "common," sense of Aristotle anticipated by several thousand years the analysis we have been making. This was not only the faculty of uniting in perception the various sensations coming from the external senses, but also of discriminating between sensations or judging in so far as this process is sensory in character, the knowing of the "common sensibles" (rest, motion, number, shape, and size), imagination and memory.

If we now compare this sort of animal behaviour with that human conduct which we term volitional in the most exact sense, we find a remarkable similarity in the sequence of experienced events. In place of the impulse arising from perception or imagination of something desirable, however, there is an intention to realize a desirable end or goal which is mentally presented either in perception or idea. This is followed by a conation, or striving, towards the goal, which conation is sustained (if we are to accept the experimental conclusions of Ach, Michotte and Prüm, and others) by an enduring determining tendency, established by the original intention, and coming to an end only when the goal has been achieved and satisfaction obtained.[1]

[1] The work of Lewin and Zeigarnik on unfinished tasks lends further weight to this view; for they found that, while completed tasks tend to pass from mind, unfinished ones tend to persist or reappear.

But the striving is not only initiated by a perception or idea of a goal *plus* a desire; it is guided throughout by the eduction of relations either of the tied ("as") or abstract ("that") kind. It is impossible to reach for the glass that you see without a causal relation, and impossible to take it in your hand without appropriate spatial and temporal relations being involved. The goal cannot be achieved in the absence of relations.

There is a further version of volitional behaviour which has attracted the attention of psychologists and moralists more perhaps than any other—namely, the conduct due to deliberate choice. But in principle there would seem to be no real distinction between the resolution issuing from choice and an intention that is not preceded by a pondering of alternatives. What happens in choice is that values are considered and weighed until one or the other is adopted as a motive, whereupon the process of choosing is resolved and intention ensues. A series of cognitive acts is succeeded by a volition; for valuation as such is merely cognitive appraisement, and has nothing to do with what we call the will until a value is made a motive because of its adoption by the Self. One may contemplate values indefinitely without necessarily acting upon them, though it is in the selection of values as motives that human character mostly betrays itself. Here, then, the sequence is typically similar to that of instinctive behaviour and simple intentional conduct: situation, stimulus or ideational goal, (discussion of values), impulse or intention, conation supported by determining tendency, eduction of relations, goal, satisfaction or frustration, the whole coloured by positive or negative emotional tone, according to the smoothly flowing or impeded character of the action.

It is in the experience of intention or resolution that psychologists like Ach, Michotte, Boyd Barrett, Calkins, McCarthy and Wells, as well as the present writer, have found the most unambiguous evidence of the immediate awareness of the Self as subject, agent, doer or cause, as distinguished from the sensorially perceived Self as object of vision, touch, coenaesthesia, kinaesthesis, and the like. And it is suggested that this subject or agent, Self, is the key to the problem of the nature of the relations that are educed to mediate between the desire and the goal to be attained and enjoyed. The Self, as volitionally "set," or determined towards, an end or goal is in a similar situation to the same Self who wilfully accepts the task and intends to perform a test of "intelligence"; for that, too, is a goal aimed at. Of the many possible relations that may obtain

between any two presented items, those emerge which are relevant; and if others should appear, they are promptly rejected by the successful testee. No one, other than a thoroughly subnormal person, when given a test of antonyms, if he replies at all, will reply with synonyms. No reasonably intelligent child, having to complete an analogies test, will educe the wrong relation from the first pair of items to apply it to the third in seeking a correlative item. Such things occur, but not in normal people "for the most part." But so do frustrations and failures to achieve goals that are even most ardently desired. The relations required for the successful performance of any mental test are prescribed beforehand by the psychologist who devises it; and the mental attitude of the testee secures their emergence if he is able to perform it. In like manner, the attitude of the creature set towards the attainment of an instinctively or deliberately intended goal secures the emergence of those relations that are relevant to its purpose. Should inappropriate ones arise in consciousness they are rejected, in much the same way as irrelevant thoughts that may intrude upon the writing of a letter or the preparation of a lecture are banished from mind. There is apparently a logic of behaviour and conduct secured by relations and relational systems; and this logic is most frequently exemplified in the ends aimed at and the means employed to secure them that are so highly indicative of character. It is, in short, the practical reason of Aristotle, or the particular reason of Aquinas, employed in the service of desire.

SCIENTIFIC METHOD IN THE STUDY OF THE PSYCHOLOGY OF RELIGION

ROBERT H. THOULESS
Cambridge University

All scientific study begins by the method of random observation and uses as its data the facts of common experience. The method of random observation of common experience is now generally derided as "anecdotalism." The anecdotal stage is, however, one through which every science must pass. There was a time when physics was passing through the stage of "curious observations" on the behavior of shriveled apples under vacuum pumps, and so on. The random observer in any field of science makes the preliminary survey which suggests the problems for later exact research.

We see examples in psychology of how exact scientific research has grown out of anecdotalism. William James, making casual observations on the possibility of training his memory, made the preliminary survey for the later exact work on formal training by Ebert and Meumann, by Sleight and by Thorndike. Anecdotes of the tendencies of activities to persist spontaneously laid down the plan of later research on perseveration. Everywhere we find the rule that random observation precedes exact experimental and statistical procedure, and that good random observation is a necessary first step in the foundation of a science.

James's *Varieties of Religious Experience* shows the psychology of religion in its anecdotal stage. If good anecdotal study is the foundation of good science, the skill with which the foundations were laid should have been a good omen for the development of a truly scientific study of religion. On the whole, this omen has not been fulfilled. Later workers have been very largely content to try to repeat James's success by his methods rather than to carry the advance one stage further. While exact work has been done, we certainly have no body of assured knowledge gathered under properly controlled conditions in any way comparable with, let us say,

that of educational psychology. The collection of such a body of assured knowledge is the present task of students of the psychology of religion.

There are, of course, many reasons for this relative poverty of accomplishment. An obvious one is the difficulty of getting adequately equipped research workers in a field which offers them no vocational future. Also there is the difficulty of getting the required data; the churches are not open to the laboratory psychologist as are the schools. The clergy have access to the data, but few are equipped for psychological research, and those who are adequately equipped are handicapped for scientific research by the fact that their official connection with religious institutions makes impossible the attitude of scientific detachment in such an inquiry.

It is not unusual for research students to offer to undertake investigation in the psychology of religion; but, for one who is willing to do a modest and exact investigation of some single question, there are three whose ambition is to write a speculative essay on some such topic as "The Objective Validity of Religious Experience." Yet it is certainly in the first of these two ways, and not in the second, that the scientific study of the psychology of religion must be advanced. An investigation of a single question may be unimportant in itself but important as a single stone in the whole building of a science.

The question whether religious experience is valid evidence of a spiritual world is as important as any question can well be, but none of us know how it can be settled by scientific method. Arguments can be brought for and against it. It is a problem about which so much has been said that the student is not likely to think of any new argument. He may make a meritorious assemblage of existing arguments which may give him satisfaction and even win him a Ph.D.; but this is not what the psychologist regards as research. The study of the psychology of religion would be in a better state if intending investigators could be diverted from this kind of activity to that of exact study of single questions.

If we agree that the immediate task before students of the psychology of religion is the collection of a body of assured knowledge free from the taint of anecdotalism, we must ask in what ways experimental and exact observational methods can be used for this end. Let us consider examples of methods which have already been used.

First, Girgensohn, at Leipzig, is reported to have used controlled

introspection as a method of studying religion. I have no personal knowledge of Girgensohn's work. The method is one against which many psychologists (including myself) are somewhat biased. It has, nevertheless, proved fruitful in certain problems of normal psychology. The value of the results obtained by Aveling and T. V. Moore by means of this method must be admitted by many who are somewhat skeptical of the importance of much of the earlier work in this field. In any case, it is desirable in a new field of investigation that we should be prepared to use any methods that may yield fruitful results, and controlled introspection should be considered as a possible weapon in the armory of the psychological study of religion.

A second possibility is the experimental study of religious psycho-physiological conditions, such as the trance conditions obtained by the Yogins. I do not know whether such a study is possible or desirable. It is obviously very difficult and is open to the objection that such conditions are, from the ordinary point of view, psychopathological. Even though their production for religious ends, under the control of a director trained in a religious tradition, may contain safeguards against mental harm to the person carrying out such exercises, the experimental psychologist has no such safeguard. He would probably succeed in producing no real mental results at all, and if he did succeed, they might be dangerous to the subject of the experiment. Madame David Neel tells us that Thibetan directors warn their disciples that madness is one of the dangers they must face in their training. This is not a danger that we can ask experimental subjects to face in our laboratories. I know of only one attempt at investigations along these lines, and I do not understand either that it did its subjects any particular harm or that it achieved any important results. I suggest that this investigation may as well remain the only one at present. There are other directions in which the psychologist of religion may work which are more likely to be fruitful and less likely to be dangerous.

A third possibility is one more in line with current research tendencies. This is the statistical study of such things as church attendance, conversions, religious convictions, and so on. Work along these lines has already been done. There have been, for example, Starbuck's study of conversion,[1] Leuba's investigation into the belief in immortality,[2] and many others.

[1] E. D. Starbuck, A study of conversion, *Amer. J. Psychol.*, 1897, **8**, 268-308.
[2] J. H. Leuba, *The belief in God and immortality* (Boston, 1916).

This is probably one of the most important methods of accumulating some more exact knowledge, but there are difficulties in its use. People often resent questions about their religious opinions and refuse to answer them. Information has often been collected in the past by means of questionnaires to a large random sample of persons. Only a small percentage of those to whom questionnaires have been sent have replied, so that any conclusions which may be drawn depend on the assumption that those who do and those who do not reply do not differ in any respect relative to the object of the questionnaire. This assumption is certainly not justified; so the sample from whom answers are received may be a highly selected one.

In an inquiry into religious certainty which I made a few years ago I used a method which, I think, is to be preferred.[3] The system of questions was given to a number of Workers' Educational Association classes. The lecturer gave a brief explanation of the object of the inquiry before it started, which removed any hostility which might otherwise have appeared. He also told class members that they should put their sex and age on the papers but not their names, and that the names of those handing in different papers would never be known. The reluctance to make intimate revelations about personal opinions of strong affective significance was thus largely overcome. In this way, it was possible to get answers from all members of the classes without exception.

This method obviously involves the sacrifice of the advantages of obtaining answers from a random sample of the population. It happened that in this inquiry random sampling was not important, since the problem was not of the distribution of certainty in the population as a whole. Even if an indication of a distribution in the whole population is required, this method would give more reliable indications than could be obtained by the questionnaire method. The advantages of random sampling have already been lost in the questionnaire method by the fact that a large proportion of papers have not been returned. Also a W.E.A. class, although it is not altogether a random sample of the population, is a fairly representative one. Unlike the sampling that takes place as a result of failure to reply to questionnaires, such selection as takes place in W.E.A. classes is not determined by the nature of the response

[3] R. H. Thouless, The tendency to certainty in religious belief, *Brit. J. Psychol.*, 1935, **26**, 16-31.

to the particular subject of the inquiry. A set of such classes, all members of which give answers, will be a much better representative sample than will the fraction of a random sample who happen to reply to a questionnaire.

If a better random sample is required, the ideal method will be to make a random sample in much the same way as was done by those sending out questionnaires, and then personally to visit all the persons chosen and get answers from them. This method is used in sociological work. It requires tact and is laborious. Obviously much smaller numbers must be used than in a questionnaire inquiry, but the advantages of using large numbers is not so great as is often supposed, and one hundred replies obtained under conditions of satisfactory sampling will yield far more reliable results than ten thousand answers obtained under conditions in which there is an uncontrolled principle of selection at work.

Another method closely related to this is the devising of tests and rating scales of moral and religious characteristics, and the determination of relationships between various characteristics. Thus Hightower investigated the problem whether teaching of the Old Testament stories produced any moral improvement.[4] He devised a series of tests of Biblical knowledge and applied them to a large group of children;[5] and gave these children also various conduct tests which presented eight opportunities for cheating, two for lying, two for showing loyalty, and two for showing altruism and service. The results showed that the pupils with high scores in the tests of Biblical knowledge did no better than the others in the conduct test, indicating that mere knowledge of the Bible is not in itself sufficient to insure proper character attitudes. The force of this conclusion depends, of course, on the validity of the tests of character. It is, in any case, an interesting example of the kind of thing that may be attempted. Numerous inquiries of a similar type have now been made in America and are to be found in *Experimental Social Psychology* by Murphy, Murphy and Newcomb.

One often hears the statement that scientific study of the psychology of religion is not possible. What is generally meant is that the fundamental problems of theology cannot be settled by psychological experiment. That certainly is true. If, however, some stu-

[4] P. L. Hightower, Biblical information in relation to character and conduct, *Proc. IXth Intern. Cong. of Psychol.* (Princeton, 1929).
[5] Starbuck, *op. cit.*, p. 316.

dents of religion can turn aside from such problems and apply scientific methods of study to single psychological problems, it is clear that success is possible, since a considerable measure of success has already been achieved. Much remains to be done. The main condition for work of value in the psychology of religion is one that applies equally to all experimental science—that those working on it should be content to lay a few bricks and not be ambitious to complete the designs for the whole building.

WILLIAM STERN'S PERSONALISTICS AND PSYCHOLOGY OF PERSONALITY

HEINZ WERNER

Wayne County Training School, Northville, Michigan

I

The tendency to synthesis which distinguishes the great German psychologists, and which leads to the union of philosophy and psychology, is likewise the salient characteristic of the labors of William Stern. And with respect to this alliance of philosophy and psychology in the scientific life-work of Stern there is present a striking peculiarity found in perhaps no other German psychologist. Whereas most of the German investigators arrive comparatively late at a point where they develop a philosophical system, Stern had in his early years conceived and even published his personalistic philosophy. With this goes hand in hand a further particularity in the history of his creative effort. From the very beginning of the awakening of his interest in the human mentality through the teachings of Ebbinghaus, Stern produced work after work of major importance. More than a generation ago he opened up whole fields of special investigation, either single-handed or in co-operation with other psychologists, and beyond this thrust them into the foreground of general interest. The psychology of testimony, of child language, the measurement of intelligence, vocational and legal psychology, the psychology of individual differences—all these are fields of scientific endeavor to which he gave enduring significance in the history of psychology.

Although in all his earlier efforts the personalistic idea is implicitly expressed, still it can scarcely be asserted that here there is a genuine underlying integration of basic philosophical principles with the actual empiric results. During Stern's subsequent intellectual development, particularly after his activities at the Hamburg Psychological Institute had once commenced, this tendency to a synthesis of personalism and psychology steadily grew clearer and more

compelling. The synthesis expressed itself, on the one hand, in the fact that his theoretical refinement in conceptual formulation, in the determination of the categories of his system, achieved forms which proved to be ever more fruitful of results in giving direction to empirical investigation. On the other hand, Stern's own empirical studies and those of his pupils gave continuous support to the personalistic theoretical structure. Compare, for example, his *Psychology of Individual Differences* of the year 1900, or even that of the later editions of 1911 and 1921, with his studies of character as presented in the final work, *General Psychology.*[1]

In both spheres of interest, in differential psychology and in the study of character, the concept of type plays a fundamental role. The essence of this concept is different, however, in the two cases as are the methods and orientation of each special field. Differential psychology starts with *single* functions. Individual differences within each single function result in the formation of simple functional types; the correlation of several functions is expected to afford an insight into the differential make-up of the individual. From a personalistic point of view, however, there are very definite inherent limitations to differential psychology. The final results of studies of single mental functions instead of mental wholes make it difficult for the personalist to integrate differential psychology into a wider personalistic science.

It is a quite different situation in the case of the psychology of character and of character types. Because single traits of character represent interdependent moments of a unitary character structure, the concepts used in characterology are essentially personalistic. In other words, characterology—as opposed to differential psychology—is a field distinctly within the domain of personalistic theory. Hence, psychological problems having a direct bearing on the subject of character assume a far more significant position in Stern's later psychology than his earlier work on individual differences.

II

Before embarking on a discussion of those concepts of Stern which play an immediate role in the psychology of personality, a few words might be said about his personalistic philosophy so far as it is related to and influences these concepts.

The personalistic system falls into three main divisions which are treated in three separate volumes: general philosophy and cos-

[1] *General psychology from the personalistic standpoint* (New York, 1938).

mology; the doctrine of man; the doctrine of value. The method employed in the system is dialectic. This accounts for the fact that it cannot be classified either as monistic or dualistic, as materialistic or idealistic. The dialectic character of Stern's thinking comes out plainly in the central idea of his approach—the *person.* The person is neither a strict unity nor a multiplicity; it is a *unitas multiplex.* Furthermore, the person is neither physical, nor psychical, since "physical" and "psychical" are merely modes of representation. The person exists as an entity beyond, outside, any separation into "body" and "mind." The person is psychophysically neutral. Its functions and properties are *personal,* and embody perfectly integrated forms of physical and psychical material.

The definitive property of the person is not, however, dialectic in nature. Person is defined teleologically, by its purposive activity. And the world is teleological in essence, since it consists of beings which must be conceived in the form of persons as bearers of teleological causality.

As we have already pointed out, Stern's system as originally presented in his first published volume exhibits no more than a comparatively remote connection with the psychology of personality proper. It was not until he had considered the more concrete problems of the relation between the person and world, a problem treated at some length in his second volume, that his personalistic point of view became of significance for the science of individuality. Here two concepts were introduced which express two aspects of man's relation to the world: person-environment, individual-social world. The old conflict of a nativistic or an empiricist interpretation of the person-environment relation Stern again resolves dialectically by bringing into play the term *convergence.* The actual personality, according to Stern, cannot be defined by absolute, innate properties. On the other hand, personality is not an object passively conditioned by environmental influence. The actual personal properties have rather the character of dispositions, i.e., tendencies or potentialities, which come into being through the co-operative, quickening effect of external factors. The environmental forces, then, do not constitute a system of pressures molding the person into a definite shape; they are the stimuli necessary to bring to light the inner tendencies, to cause them to operate. The two groups of conditioning factors converge in building up the real personality. Furthermore, Stern overcame the dualism of "individual-social

world" dialectically by the use of the concept of *introception.* The person can preserve its microcosmic entity and at the same time acknowledge the ends of other persons, individual and super-individual, only by making their goals in life its own. This process of taking into the self the ends and entities external to the self is "introception." In the third volume dealing with the philosophy of value, introception is conceived as a centrally important factor making possible the values of human culture.[2]

III

In the process of a gradual convergence of personalistic thinking and the empirical problems of science the *Studies in Personalistic Science*[3] represent the most fundamentally important advance. Here Stern's efforts are directed towards the end of reconstructing personalism into a science of man, in order to serve as a general basis and point of departure for all scientific inquiry dealing with the problems of the person—biology, medicine, psychology, ethnology, pedagogy, sociology, etc. It is this one task of Stern's which to a certain degree parallels the so-called philosophical anthropology of Scheler, Heidegger, and Cassirer. It is a scientific anthropology, where the term anthropology is understood in its primary, etymological sense. This science Stern called, for his part, *personalistics.* And so far as this science of the individual provides a specific basis for an empirical psychology of the person, it is treated in the first (and only) part of the *Studies in Personalistic Science.*

The following exposition should clarify this turning from a personalistic theory strongly metaphysical in its cast to an essentially phenomenological analysis of the problems of the person. Stern chooses three groups of problems as central in his personalistics: the determination and description of the categories of (a) *person,* (b) of the *world* associated with the person, and (c) the person-world relation in itself.

The fundamental categories of the person are *totality, depth,* and *meaning.* The basic category of the world is its *personal character;* the basic category of the person-world relation is its *personal dimensionality.*

[2] It might be noted that most of Spranger's types of attitude with respect to life and culture—love, aesthetic understanding and productivity, religion, practical, social, ethical evaluation—are defined by Stern in terms of differences in the kind of introception.

[3] *Studien zur Personwissenschaft: I. Personalistik als Wissenschaft* (Leipzig, 1930).

The personality is a totality because it is a unitas multiplex. Single parts of the personality are called *moments,* rather than elements. But if the totality is thought of as a *structural* unity of moments, this is only partially correct. Indeed, the personality articulates that which belongs to it, but at the same time engulfs moments with its own unity, and in so doing leaves a significant number of these moments remaining in a vague state of undifferentiation. At this point, as elsewhere, the distinction between personalistics and gestalt psychology becomes obvious. The person is not only a gestalt, but a *non-gestalt* as well. Vagueness, non-gestalt, equivocality are not to be evaluated in any negative sense. They are a positive characteristic of the person. Equivocality and vagueness constitute a fundamental condition, a field of potentiality, to be realized in the future. *Person* is not only defined according to what it is now in its present state of being, but also according to what it will become in the future.

The person is a totality because its unity cannot be derived either from lower unities (elements), or from higher (super-individual) unities. With respect to the totality the moment stands in a double dialectical relation, which Stern termed that of *salience (Abhebung)* and *embeddedness (Einbettung).* Since each moment is a part of the whole, and yet, relatively, a *separate whole in itself,* it must in some way stand apart from the larger whole, appear saliently, as it were, against it. But in so far as it is a *part,* after all, it must be embedded in the person. Between a maximal embeddedness and a maximal salience all grades are possible and actually discoverable. A moment that, relatively speaking, is strongly salient has gestalt. Yet this does not mean, as gestalt psychology obviously assumes, that gestalten exist independent of the person, subject to their own specific lawfulness *(Gestaltgesetze).* According to Stern's way of thinking, the hypostasis of gestalten as self-subsistent, independent entities represents the very fallacy of the elementary psychology to which the gestalt school is diametrically opposed. To his mind the gestalt is no more than the result of the process of separation of, or rather the establishment of salience in, moments with respect to the whole of the person. And because of this, furthermore, gestalten are not finalities, for in opposition to them stand the vague, as yet amorphous, experiences of the person, the potentialities and dispositions which make up the deeper life of the human individual.

In conjunction with the category of totality, the category of *depth* is an irreducible distinguishing mark of the personality. The conception of personality as found in the psychology of elements knows personal moments in only two relationships: conjunctive and successive. Periphery and center of the personality, superficies and depth as personalistic properties, came to light only when the totality character of the personality was recognized. *Depth,* on the other hand, is neither a psychic, nor a spatial sign. It is *psychophysically neutral,* that is, beyond and outside any division into the psychical and the physical. The knowledge that the personality has depth led still further to the disclosure by analysis of strata *(Schichten)* in the personality. Stern acknowledges the great value of the theory of levels as it is used in different psychological systems (psychoanalysis, developmental psychology, etc.). But he is quite justified in pointing out that this term loses its efficacy when, as has often happened, the strata are thought of in the sense of being spatially rigid, geological entities. Such an hypostasis of self-subsistent levels once again leads to the old psychology of elements. Levels are not structural *elements* of the personality, Stern emphasizes, but *part-wholes* embedded in the total personality, participants in the dynamic of the whole person. That the relation of the levels to each other is not fixed, rigid, static, but rather shifting, creative, and dynamic is clearly demonstrated by the fact that, with respect to their depth, they are interchangeable. It is through this insight that we find the key to the meaning of events which would be otherwise impossible to reconcile with a unitary personality. Abrupt transformations of the person, cleavage phenomena, etc., are not to be understood as arising out of a void, but as a shifting of the strata in the vertical dimension that results in a reversal of position of the lower with respect to the upper, or in the co-existence of the one stratum with respect to another, or others.

The second group of problems in personalistics centers about the concept of *world.* The *personal world* is different from the world in the usual sense of the word in that it possesses a center, a focus, which is the person. Since there is an endless number of persons, there is also an endless number of personal worlds. Here Stern analyzes a concept that has yielded increasingly excellent results in biology, especially as used by v. Uexküll. The analysis of worlds, which v. Uexküll has recognized as a fundamental problem of biology, is carried out by Stern in the personalistic frame of reference.

The personal world is centered in the personality in three ways: (a) With respect to *meaning.* The meaning-content of the world is determined in terms of the personality; the person selects and interprets the single moments and the totality of the world. (b) With respect to *function.* The world is directed towards the person, and the person is directed towards the world. Hence, the relation between person and world is polar. The things of the personal world exhibit a *demand-character,* or *valence* (in Lewin's sense). From the standpoint of the person the world has a *material character,* that is, it is material towards which the person reaches out to give form. (c) With respect to *dimension.* The person lives in a spatial-temporal present out of which spatial-temporal dimensions spread centrifugally, or towards which they converge centripetally.

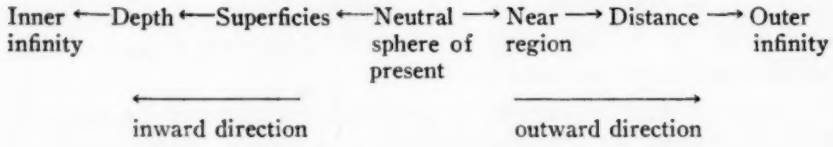
So far as the meaning-content of the world is concerned, Stern sets up three spheres: the animal biosphere, the world of objects, and the introceptive world. The *biosphere* is that sphere most clearly expressed in the life of the animal. It is a sensori-motor world in which objects as forms independent of the person do not exist. In other words, there is scarcely any, perhaps no, distinction between object and subject. With man above this vital sphere there is built up another *sphere of self-subsistent objects.* This second sphere only in the most recent times has been subjected to psychological analysis, especially at the hands of the developmental psychologist. The highest world-sphere is that which can be *introcepted.* In this final realm objects are not merely self-subsistent but, even from the standpoint of the person, also possess the property of having a self-contained meaning. Introception presupposes the self-contained meanings of other individual and super-individual subjects. Introception means the affirmation of the self-dependent significance of persons and super-personal entities.

The last field of inquiry in personalistics explored by Stern is that of *dimensions* which are related in a similar manner both to person and to world.

The person and the world attached to it have their own, i.e., personal, dimensions. Personal dimensions of space and time differ from and, as it proves, are more basic than, the impersonal-mathematical dimensions. But it is not as though mathematical time and space were physical in nature, and personal time and space psychical. Rather it is true that personal dimensions are psychophysically neutral, that is, as pointed out before, outside any separation into the

physical and the psychical. All this will become clearer when we discuss the forms of the dimensions themselves.

The relation of person to world becomes expressed in the *outer-inner (Aussen-Innen)* dimension. World is the non-person, that which is alien to the person, the *outer* sphere. In contrast to this, all that belongs to the person is *inner* in dimension. The mathematical system of co-ordinates does not have this polar contrast of outer-inner because its center has shrunken to the absolute limit of nullity. Everything that is mathematically presented is, however, outer with respect to the absolute point of nullity. The personal system of extension, on the contrary, has a central part which is not a point, but an organized totality that encloses within itself a fullness of moments. Between a complete outer and a complete inner dimension there is an intermediate region *in which person and world are one.* The immediate, naïve actions of man are accomplished in an intermediate region, in a species of limbo, wherein impulse, implement, and object constitute an inseparable whole. In all naïve relations of person to person, of person to the super-personal, there is no strict distinction made between the ego and the "you" or the "we." Developmental psychology explains the gradual differentiation of the middle stratum into a genuine inner region, the ego-person, and a genuine outer region, the world. From the standpoint of this middle realm itself, it is possible to have both inner and outer directions. The inner direction depends on a process of stratification according to personal depth, whereas the outer direction depends on a process of stratification according to world-distance with respect to the person. This is illustrated in the following diagram:



The strata of the person lie so much the deeper, the farther they are from the immediate world, the more they represent the specific ego as independent of the world. In opposition to this, the strata of the world lie at that much the greater distance, the less they reach into or towards the real life of the person, in other words, the more independent the world is of the person. *Distance, nearness, superficies* are not to be understood mathematically. (A man who sits near me, can, personally considered, be endlessly removed from me.) These

terms are also not to be interpreted as metaphorical transformations of the spatial into the nonspatial. If anything, the exact opposite is true. In their primordial personal meaning these categories are quite outside and irrelevant to any separation into space and time, into physical and psychical. It is only a subsequent abstraction which distinguishes between the specifically spatial and the specifically temporal, between the specifically physical and the specifically psychical categories. The subsequent differentiation occurs in the following manner. In spatial-temporal extension that side which is irreversible is separated from the one which is reversible. The irreversible moment becomes determined as temporality, and the reversible moment as spatiality. The original absence of separation between space and time makes it intelligible that analogies should exist which link both fields. Rhythm, for example, is a temporal form, but we can also speak of rhythm in space when referring to architecture and ornament. Symmetry, on the other hand, is a spatial property, but is nevertheless experienced in musical-temporal forms.

Let us now consider the characteristics of *personal spatiality.* In distinction to the limitless and homogeneous directional manifold of mathematical space, personal space has a threefold dimensionality. These three dimensions are: above-below, before-behind, right-left. As we have previously explained, these basic directions are not to be derived from mathematical space, and, in particular, not from Euclidean space. They are an expression of the organization of the person, of the human dynamic, which is articulated in a triadic fashion.

The most specifically defined human dimension is that of *above-below.* This is a result of the erect posture of walking. But, again, above and below are primarily not mathematical directions, or quantitatively determined poles. They are qualitative conditions. This is shown particularly in the fact that they are experienced at times as distinctions of rank and value. To be directed upward is an expression of human strength, vigor, and majesty. The term *upright* indicates the overcoming of gravitation. It is the child who lies prostrate; it is the weak, the aged, and the slave who proceed bent downward. And thus the *above* direction contains the significance of mastery, and the *below* or down direction that of weakness and passiveness. In language, in the symbolism of the myth and art, in the images of the dream, the opposed evaluation of above and below is found in a thousand forms. This brings to

mind Adler's individual psychology where this opposition represents the dynamic scheme for the development of the personality. The superiority in rank of above with respect to below is also grounded in human biology. The mental functions reside in the upper parts of the body, the vegetative, animal functions in the lower parts.

The second direction in personal space is that of *before* and *behind.* Here also before and behind are qualitatively-personally opposite. *Before* means facing in the direction of personal goals. It is all the same whether it be a question of the goals of observation, of recognition, of action—in all the acts of perception, of conception, of seeking, of speaking, etc., man is directed *forward.* On this account, then, the before or forward direction is preferred to the backward direction, or the back part, just as above is preferred to below.

The third dimension is the sidewise direction with the poles of *right* and *left.* These poles, too, exhibit a difference with respect to mathematical direction, in that they are primarily distinct from each other in a qualitative sense, and that the symmetry they possess is defective. Asymmetry not only appears morphologically in the structure of the body. Above all, it comes to light functionally and expressively. In the *functional* sense asymmetry means a division of labor in the work performed. The more complicated and highly developed the system of the person's accomplishment, the more subtly differentiated the participation of left and right in this accomplishment. In the sense of *expressiveness,* asymmetry indicates the partial defeat of the mechanical, impersonal lawfulness of the symmetrical. Asymmetry, in consequence, is the physiognomic sign for such properties of character as wilfulness, inner differentiation, disharmony of character, etc. This personally felt difference is the basis for the *left* and *right* symbolism that is found in myth and magic (right-good; left-evil) and in the mores and customs of everyday life.

Stern's acceptance of the idea that there exists not only an impersonal, but also a personal, world leads him on to the further analysis of the extent to which the dimensions of this world are conjunctively determined by the person. Through this analysis he comes to the conclusion that the world of mathematical dimensions represents only the last step in a series of world-structures, a series wherein the richly qualified personal dimensions become more and

more depersonalized and stripped of their qualitative multiplicity. The personal world has its above and below, its before and behind, its right and its left. This is in accordance with the idea that the personal dimensions reach out from the person to encroach upon the vitally teeming, personal world.

That which holds true for spatial dimensionality also holds true for the *temporal.* Personal time, with its qualitatively diverse directions of forwards and backwards, becomes extended so as to apply to world time with its qualitatively diverse poles of future and past. And, as in personal space the forward is superior to the backward so, too, in personal time that which becomes is preferable to that which has been. This is grounded in the teleological nature of the person. The "has been" is the unavoidable background against which stands forth the future towards which the person moves. From here on Stern develops his thesis of the *plasticity of the past and the future,* one of the most interesting of his theories, and one most productive of results for the psychology of personality. All that is not-present, so far as it bears relation to the person, has potentiality and plasticity. This is perhaps a truism so far as the future is concerned. Future events of the impersonal world can be predicted and shaped in advance. But the future of the personal world is not characterized by a clear prognosis. It is, however, more difficult to apply the notion of a multiple character to the past. The past becomes reality through new configuration. The totality of experiences and fateful events which lie behind the person resides in this person as a continuum of possibility, as diffuse material which becomes ever realized anew with respect to the present, that is, undergoes new formulation. This process of realization in the person does not always lead to identical results; the interpretation of this past is dependent on the present striving, interests, and goals of the person. Hence, the past is multiple in meaning and is plastic.

And, now, that which can be said of personal time also holds true for trans-personal time as well. The past of a people, of a cultural epoch, is just as multiple in its meaning as the future. In the consciousness of a people past events become configurated over and over again to correspond with present and future goals. In his historico-philosophical analyses Stern had already demonstrated (*Wertphilosophie,* Chapter XI) the *plasticity of the past* as a basic principle of history.

IV

The direct and indirect effect of Stern's personalistic ideas on the various fields of psychology which deal with the individual can hardly be overestimated. This influence has left its mark on such special topics in normal psychology as child-psychology and the psychology of adolescence, which Stern himself treated in one of his many works,[4] and beyond this has affected the teleologically conceived theory of neurosis (A. Adler) and of psychopathic personalities (Eugen Kahn). It has even extended to the general medico-biological consideration of the personality (Kraus's *Pathology of Person*).

In conclusion, we may take for discussion three problems of fundamental significance for the psychology of the personality, the orientation and analysis of which have been greatly furthered by Stern's personalistics. These three problems are: (a) the methodological problem of the diagnosis of personality; (b) the problem of setting up a typology of personality and character; (c) the problem of constructing a typology of personal worlds.

The theory of personality as a *unitas complex* articulated vertically in strata of varying depth has a direct bearing on the methodological and practical problem of the psychological diagnosis of personality. It was in relation to his work on intelligence that Stern first began to turn his attention to psychological diagnosis from the standpoint of personalistics. So far as the usual procedure of diagnosing intelligence was concerned, some very serious objections could be raised when examined in this light.

There are two points in Stern's general criticism which have had a particularly decisive influence, not only on the work done at the Hamburg Institute, but also on all intelligence-testing in Germany. His first objection is that the factor of intelligence is treated in too severe isolation as a supposedly independent disposition, without regard for its place in the personality as a whole. In brief, it is quite inadequate to test intelligence without relating it to the impulsive, volitional, and practical life. This consideration resulted in many investigations at the Hamburg Institute and elsewhere. Methods were developed which made it possible to build up a rounded picture of the child-personality, and thus avoid the bias of any subsequent judgment made on the basis of rigidly conceived intelligence

[4] *Anfänge der Reifezeit* (Leipzig, 1926).

tests.[5] A "practical" intelligence was emphatically pronounced by Stern and his students to be of equal importance to the "theoretical" intelligence as measured by the Binet method.

The second important point in his critique of intelligence-test methods maintains that the test shows the ability of the subject only so far as he is "reactive." However, the factor of *spontaneity* belongs to intelligence as a basic function of the teleologically conditioned person. The fulfillment of the thinking function as set in motion in spontaneity by the person proper is of equal importance with respect to the reactive response. The newer tests more and more tend to recognize this factor of spontaneity. Such tests as those which involve the description of a picture, the criticism of an absurdity, etc., do indeed lessen the accuracy of the score. Nevertheless, on the other hand, we gain a better insight into the spontaneous motives and directions of intelligence, since these tests permit the individual much greater freedom in his intellectual activity. In Stern's opinion, however, the typical activity of intelligence within the usual test situation does not have scope enough to assure the presence of spontaneity. Spontaneity becomes revealed only to the observer who takes infinite pains to study the child in the natural situation. In this consideration Stern's efforts went so far as to systematize the observation of children in "guidance schemes" for teachers and psychologists. This procedure of observation combined with the test results gives the teacher and the school-psychologist the opportunity to work out a genuinely comprehensive picture of the child's intelligence.

This now brings us to the general problem of diagnosis. Here, starting from the basic notion of personality as a *unitas multiplex* Stern combats the predilection of psychology to measure intellectual ability, character, vocational aptitude, etc., in terms of one set of symptomatic results alone.[6] For example, graphology uses handwriting and nothing else, the psychometrician in the Binet style limits himself to mental tests, the "depth-psychologist" (using Rorschach's method) concerns himself with mere ink-blots, and so on, in arriving at final definitions. This *mono-symptomatology* represents one of the most disastrous stultifications of the scientific approach in the interpretation of personality. It contradicts the personalistic

[5] Cf., for example, Hellmuth Bogen, Zur Methodik des Totalverfahrens in der Berufseignung, *Festschrift William Stern* (Leipzig, 1931).

[6] Cf. Stern's article, Persönlichkeitsforschung und Testmethode, *Jbch. d. Characterologie*, 1929, **6.**

axiom of a potential multiplicity of meaning in the person. The personality is not only that which is expressed in a certain limited situation. It can and will often be found that other, even diametrically opposed, aspects of the personality come to the fore in different diagnostic situations. And besides this, even the symptomatic value of the same diagnostic situation may vary with different persons. The main assumption of graphology, for instance, is not only that traits of personality express themselves in handwriting, but that these graphological manifestations, if identical, are to be interpreted identically for all individuals. It may very well be, however, in actual fact, that individual X expresses the very depths of his personality in his handwriting, and that the handwriting of individual Y has no significance at all so far as his character is concerned. This second individual may express himself much more clearly in other ways, in the voice, or in the manner of acting, in the physiognomic bearing, and so on.

In brief, this means that the personality can be defined only according to a *polysymptomatic* method which brings into play several diagnostic approaches.

The problem of a *typology of character* was attacked quite recently by Stern in his *General Psychology*. According to Stern, character means that aspect of the psychophysically neutral personality which is connected with the predisposition to acts of will. Since character is a property of the person it can be treated only in terms of a *unitas multiplex*. It is difficult to conceive of a unitary character expressing itself uniformly in a highly diverse manifold of volitional situations. To overcome this impasse various attempts have been made to assign the unity of character to one mode, and the manifoldness of character to another. Kant, for example, distinguishes between the "intelligible character" as the unalterable, indivisible, unitary core and the "empirical character" which is variously directed and stratified, subject to change with time, and susceptible to the persuasion of experience. From a phenomenological standpoint Pfänder has of late revived the Kantian theory by differentiating between "basic character" and "empirical" or "apparent" character. Stern attempts to reconcile the two-sided aspect of character, and to overcome the dualism of Kant and his school of followers, by demonstrating the reciprocal influence of *unitas* and *multiplicitas*. In reality, in Stern's thesis, each individual has but one character emerging from the interaction of internally con-

ditioned striving with the "actualizing" factors of the personal world. Expressed otherwise, character is both (and equally) "intelligible" and "empirical."

Furthermore, it would be erroneous to define the unitary nature of character as inflexibility or simplicity. The unity of character does not signify rigidity. The unity is actually disclosed in a different sense, that is, in the consistency of meaning discernible in the patterns assumed by the character. Again, simplicity is not implied by the unity of character, since volitional qualities are not fundamentally uniform, but exist in variety because of the very hierarchical structure of this character in its developed state. It is because of the stratification and complex structure of the character that any mere listing of traits is inadequate for a true analysis. The bare enumeration of traits provides no more than the material which must be shaped into a complete picture of the whole.

From his personalistic standpoint Stern essays the classification of character traits and types. Since character is defined as the volitional aspect of the personality, it follows naturally that the types should be classified according to the characteristics of acts of will. These characteristics are: goal-formation, energetics (dynamics), and structure.

With respect to the goals of the personality two main divisions can be distinguished. A person's acts may be directed towards the external world with its objective values or towards the self. Character traits related to personal goals may be called *autotelic;* those related to the outer world may be called *heterotelic* traits.

The autotelic disposition may be classified according to the two main personal aims: self-preservation and self-development. Whereas the first of these goals is primarily biological in nature, the latter is essentially connected with character form in its true and human sense. Heterotelic dispositions are directed towards the realization of aims belonging to the external world. These aims are threefold in kind: super-personal (referring to the family, nation, etc.); altro-personal (referring to other persons); idealistic (referring to abstract values). And so the heterotelic dispositions may be classified in a corresponding terminology as those exhibiting hypertelic, syntelic, and ideotelic traits of character.

From the relation between autotelic and heterotelic traits three telic types result: the *autistic,* the *heteristic,* and the *introceptive.* The differentiation into autistic and heteristic types of character

shows some analogy to Jung's typology (introversion-extraversion) and therefore to all pre-scientific typologies of this kind (subjective-objective, sentimental-naïve, etc.).

Dynamic types of character result from the relation between the drives supplying the energy to action and the controlling, directive action of the will. This volitional activity reveals itself positively as the replacement of "blind" impulsive activity with an action meaningfully organized. It reveals itself negatively as inhibiting the realization of impulses from within and reaction to outside forces. Three essential traits of character are necessary presuppositions for the existence of an organized volitional activity: strength of will, which means the ability to concentrate energy upon the achievement of some action; persistence of will, which means ability to execute an action in all its varied phases; consistency of will, which means the ability to harmonize many activities performed at considerable intervals of time. The qualitative as well as the quantitative variations of these factors, the relation of the organizing powers of will to the drives, etc., account for different dynamic types of character.

A final group of types is derived from structural traits. The formal structure of the character, since it is a *unitas multiplex,* varies according to the relative degree of dominance either of the moment of unity or of multiplicity. The antitypes emerging from this difference are those tending to harmonious simplicity as over against those of a conflict-ridden, split nature.

Looking at this characterological system as a whole, some psychologists might reject it because of its speculative nature. But it should be born in mind that the many contradictions in viewpoint and result which are encountered in the field of typology eventually can be reconciled only by a comprehensive, precise, and systematic conception of the whole.

The notion of a *personal world* provided the basis for the Hamburg Institute's program of investigation of the different types of such personal worlds. These types may be conceived genetically and the investigation may be directed, for example, towards the examination of the general types of child-world at a different developmental level. But in the actual procedure of analysis not only the developmental stage, but the whole cultural setting as well must be taken in account. Hence, Martha Muchow's program for such an analysis seeks to establish a typology of the child-world and of the adolescent-world, one that is definitely cognizant of specific cul-

tural patterns in space and time. Miss Muchow, in strict conformity with this program, has made a study of the life-space of the city child. In this study she demonstrated for the first time the typical characteristics of the world of the child as thus conditioned. In her posthumous, most admirably written book,[7] she has shown how the life-space emerges from the interaction of external, nonpersonal factors and the child-like dispositions, how the child selects and interprets the outer stimuli, and molds them into a world of his own that is typically different at different developmental stages.

These novel and productive approaches to the problems of child-psychology were tragically interrupted by M. Muchow's premature death. She was undoubtedly Stern's most brilliant pupil. Her studies realize the synthesis of personalistic theory and empiric investigation in perhaps its most fruitful form.

[7] Martha a. Hans Muchow, *Der Lebensraum des Grossstadtkindes* (Hamburg, 1935).

FRUSTRATION AS AN EXPERIMENTAL PROBLEM*

SAUL ROSENZWEIG, O. H. MOWRER, GEORGE M. HASLERUD, QUIN F. CURTIS, AND ROGER G. BARKER

I. THE SIGNIFICANCE OF FRUSTRATION AS A PROBLEM OF RESEARCH

SAUL ROSENZWEIG
Worcester State Hospital, Worcester, Massachusetts

All of us are probably agreed that psychology has yet to prove itself indispensable to the world whether for truthfulness or for usefulness. Its history thus far represents a dilemma: on the one hand, problems of little practical significance have been studied by highly reliable experimental methods; on the other, problems of real importance in everyday life have been approached by inexact or otherwise questionable methods. Today, however, we are going to indulge the belief that the dilemma is not insurmountable—if upon this unfortunate frustration of psychology we can bring to bear a fortunate psychology of frustration.

The first problem that inevitably confronts us in a discussion of frustration is the definition of the term. In general we must rely here as elsewhere upon operational examples, and these will be provided in the papers soon to be heard. From them it will be seen that we are dealing with a phenomenon created either through privation, deprivation, or conflict and involving states ranging all the way from mild craving or unconsummated drive to more acute interference with satisfaction by thwarting, to sudden and extremely shocking or traumatic experiences.

*The following six articles constituted a symposium on Frustration as an Experimental Problem held at the annual meeting of the American Psychological Association, Columbus, Ohio, Sept. 8, 1938. Saul Rosenzweig, Chairman. Remarks by the invited discussants S. W. Cook, J. H. Elder, J. McV. Hunt, and B. F. Skinner are not reproduced here.—Editorial Note.

But a word or two of more theoretical orientation is perhaps not out of place. From such a standpoint it seems helpful to recall the concepts of maladaptation, tension, and disequilibrium or disturbance of homeostasis. The notion of maladaptation as related to frustration points chiefly to *environmental* factors with which the organism is failing to cope successfully. At the other extreme is the concept of tension, a rise in which is frequently said to be associated with frustration when interest is centered upon the state of the *organism.* The notion of disequilibrium or disturbance of homeostasis as applied to frustration tends to stress—and correctly—the *interdependence* of both environmental and organismic factors.

A more adequate treatment of this question, to which it is possible merely to call attention here, would have to consider the definition of need or drive and the significance of biological defenses.

Frustration is such a universal aspect of experience that some philosophers have even woven an entire metaphysical system around it. While we may not wish to share such pessimism, we cannot but recognize the important place which frustration occupies in life. Even if we prefer to look at life optimistically—with Bergson instead of with Schopenhauer—and see in it a creative evolutionary process instead of a battle against inevitable defeat and death, it must be granted that creation itself has its travails—its frustrations. Herein perhaps lies a clue for escaping from the quandary: creation or growth and frustration or thwarting are merely two aspects of the same life process. Were there no needs to satisfy, no positive biological processes of defense, nutrition, sexual activity, and social relationship, there would obviously be nothing that could be frustrated. If interest is centered this afternoon on the darker side of the life process, the reason is simply that it is often easier to understand how a thing goes by finding out what made it stop. Our ultimate interest is, of course, in getting it to go again. Since our discussion is intended to have special implications for abnormal behavior, this emphasis is not very astonishing.

It is more astonishing that the adoption of frustration as a keystone for the experimental treatment of the problems of normal and abnormal motivation has not till recently been seriously attempted.[1] Such an intention was perhaps implicit in American

[1] S. Rosenzweig, Frustration as a co-ordinating concept in experimental psychopathology, *Report of National Research Council Conference on Experimental Neuroses and Allied Problems,* 1937, 38-42 (privately distributed); to be published shortly in more extended form under the title "Frustration as a Basis for Experimental Psychopathology."

functional psychology—its third intention if early experimental animal psychology (with behaviorism as its upshot) and mental testing may be regarded as its first two—but this intention was never realized, at least not before our time. Again, it cannot be denied that frustration, especially of sexual impulses, appears implicitly, if not explicitly, on nearly every page of the psychoanalytic literature. But neither can it be denied that a definitive recognition of the importance of this concept and its systematic exploitation are not to be found there. Perhaps the present movement is to be interpreted as a joint fulfilment of the systematic intentions of functional psychology and the experimental possibilities of psychoanalysis.

The advantages of taking frustration as a point of departure for a systematic approach to experimental motivation are readily apparent. Such a formulation at once entails an empirical reference that such concepts as the id or the unconscious can never have. Furthermore, it suggests an organization of such available data as are worthy of inclusion in an experimental scheme. Our objective should be to make the most of this happy combination by employing operational definitions wherever it is possible so to do without undue sacrifice of relevance; and by avoiding classifications based upon content alone, e.g., lists of instincts or needs where personal taste would have to be the final arbiter. By throwing the emphasis upon operations and relationships of operations it seems possible to put off until a more propitious moment when more is known, if not to avoid altogether, certain knotty problems that today at any rate are definitely insoluble.

Our chief purpose this afternoon is to consider frustration as an experimental problem. To this end a series of four papers will be offered by the participants of the symposium. The first of these, by O. H. Mowrer, deals with the *sociological* implications of frustration. Attention is here centered upon the educational aspects of the problem and upon possibilities for the experimental study of the broad social questions involved. The second paper, by George M. Haslerud, presents certain investigations of frustration in chimpanzees in which gross *behavorial* phenomena were observed. The third contribution, by Quin F. Curtis, discusses certain *physiological* accompaniments of frustration as exemplified in the so-called "experimental neuroses" (perhaps better called "experimental behavior disorders"). The final paper, by Roger G. Barker, describes work with children in which the cognitive and certain more purely *psychological* aspects of frustration were studied.

II. SOME RESEARCH IMPLICATIONS OF THE FRUSTRATION CONCEPT AS RELATED TO SOCIAL AND EDUCATIONAL PROBLEMS

O. H. MOWRER*
Yale University

The common conception of the phenomenon of frustration is heavily charged with negative connotations. By definition, frustration is a state of affairs against which the affected individual's energies are more or less strongly mobilized, which he seeks to eliminate or, if possible, entirely to avoid. If happiness may fairly be said to represent the ultimate goal of all human endeavor, frustration is its antithesis.

One step removed from this individualistic, subjective evaluation of frustration—but no less negative—is what may be termed the clinical perspective. Modern researches into the etiology and meaning of the psychoneuroses, on the one hand, and delinquency and criminality, on the other, have revealed relatively severe and persistent frustration as an unvarying antecedent;[1] successful therapy in both fields accordingly presupposes the elimination of this underlying factor. In the mind of the clinician, frustration thus looms large, a condition to be alleviated, forestalled, opposed.

But the fact that fire can consume and destroy does not lessen its capacity to create and conserve. Likewise, the fact that frustration, in even mild degree, is always objectionable from the narrow, individualistic point of view and when more severe may lead to some of the most painful and devastating suffering of which man is capable does not necessarily justify the conclusion that it is an unmitigated evil. In two very important respects, frustration functions

* Although no one but myself can be held responsible for the specific contents of this paper, I must acknowledge the profound degree in which my views in this connection have been shaped by my colleagues in the Institute of Human Relations. For a fuller account of many of the concepts which are here expressed or implied, I refer the reader to a forthcoming joint publication: *The frustration-aggression hypothesis* (New Haven, 1939).

[1] Cf. K. Horney, *The neurotic personality of our time* (New York, 1937); and W. Healy and A. Bronner, *New light on delinquency* (New Haven, 1936).

in a most useful, constructive manner; if it is here an evil, it is indeed a very necessary one.

When human beings come into the world they are not equipped with the repertoire of responses which their particular culture will demand of them. Nor are they at first capable of acquiring these responses. For a time, reflexive and the most easily learned ways of gratifying their basic needs are tolerated, even encouraged. But this period of indulgence is short. As the child's physical and mental capacities enlarge, the adults in his environment begin to manifest dissatisfaction with his infantile ways. Early modes of response which perhaps brought the most profound satisfactions to the child himself but which taxed the patience and energies of others now have to be abandoned and new, more arduous ways acquired. Each new level of adjustment is achieved only to be in turn abandoned as the child is pushed on by increasingly complex demands. From the point of view of the highest evolution of the individual and the welfare of the group this is an imperative process. But we blind ourselves to facts of the greatest importance if we assume that there is anything desirable about it from the standpoint of the child's own inclinations and wishes.[2]

The view that the mental and social development of the individual child comes about more or less automatically, due to the unfolding or so-called maturing of innately given tendencies, obscures the fundamentally dynamic character of this process and provides no basis for the understanding of the numerous aberrations which may beset the growth of personality or later threaten its integrity. More fruitful is the view that this development is always achieved under pressure, pressure constituted of innumerable deprivations, thwartings, and penalties which may be gross or subtle but without which education does not go forward. Although the imposition of frustration is no guarantee that education will result, it seems to be an elemental fact that education cannot be achieved without it.

Although acutely aware of the dire consequences to which frustration sometimes leads, Sigmund Freud has nevertheless repeatedly emphasized the importance of frustration in personality development. In such random remarks as the following, Freud has made it clear that he fully appreciates the necessity for blocking old modes of response if new ones are to be superimposed. "Anyone," he

[2] For a discussion of some of the implications of the child's reaction to this process, see O. H. Mowrer and W. M. Mowrer, Enuresis—A method for its study and treatment, *Amer. J. of Orthopsychiat.*, 1938, **8**, 436-459.

says, "who knows anything of the mental life of human beings is aware that hardly anything is more difficult for them than to give up a pleasure they have once tasted."[3] "It may be universally observed that man never willingly abandons a libido-position [i.e., an habitual mode of gratification], not even when a substitute is already beckoning to him."[4] "'Spoiling' young children has the undesirable result that . . . [it] encourages persistence in that childhood state of which both motor and psychic helplessness is characteristic."[5] And in yet another place Freud remarks that "The power which has enforced this development upon mankind, and still today maintains its pressure in the same course, is . . . the frustration exacted by reality. . . . Neurotics are those . . . children upon whom this severity has had evil effects, but that risk is inevitable in any education."[6]

Capable of leading either to highly desirable or to highly undesirable results, frustration is thus a force to be reckoned with; and it stands as one of the important current problems of the behavioral sciences to ascertain and state the conditions and principles which determine which of these two opposed types of consequences will occur. On the basis of careful clinical studies, it is already known that, by and large, frustration which leads to *habit progression,* i.e., to the acquisition of a new mode of adjustment, is not likely to be pathogenic and that frustration which leads to *habit regression,* i.e., to a return to a previously abandoned mode of adjustment, *is* likely to be pathogenic, although this is not necessarily the case.[7] With this general observation as a starting-point, the problem as to whether frustration will result in favorable or unfavorable consequences can be broken down into the following list of questions which, although variously formulated, seem to be foremost in the minds of research workers and writers in this field today.

1. How does the particular nature of the frustration which causes an established mode of response to be abandoned affect the probability of regression to it when a subsequently acquired, superimposed response is in turn frustrated?

2. How does the strength of an abandoned habit (i.e., the degree

[3] S. Freud, The poet and day-dreaming, *Collected papers* (London, 1934), IV, 175.
[4] S. Freud, Mourning and melancholia, *Collected papers* (London, 1934), IV, 154.
[5] S. Freud, *New introductory lectures on psycho-analysis* (New York, 1933), p. 151.
[6] S. Freud, *A general introduction to psycho-analysis* (New York, 1920), p. 310.
[7] Cf. F. W. Wells, Social maladjustments: adaptive regression (Chap. 18), in Murchison's *Handbook of social psychology* (Worcester, 1935), pp. 845-915.

of its "fixation") affect the probability of subsequent regression to it?

3. What are the factors which determine when regression will be pathogenic and when it will not?

4. Does the particular nature of the frustration encountered by a given response play any role in determining whether habit progression or habit regression will follow?

5. How does the strength of a habit affect its capacity to withstand frustration?

6. What determines whether frustration will be followed by habit progression or regression or simply by aggression?

7. Do progressive, regressive, and aggressive reaction tendencies become generalized; e.g., does the fact that regression has occurred in one situation increase its probability of occurring in other situations?

8. How do age, sex, constitutional factors, and species differences affect the individual organism's reaction to frustration?

9. How do the individual's prior experiences with the person or object perceived as the source of a given frustration affect that individual's reactions to the frustration?

10. How do the strength and other characteristics of the drive underlying a given pattern of behavior which is frustrated affect the resulting reactions to the frustration?

The answers to the foregoing queries, when they are obtained, will be of the utmost importance to pedagogy and mental hygiene. The central problem in these fields today is how can children be educated for modern life, adequately and efficiently, yet with the minimum of danger to the present as well as future integrity of their personalities. Much depends upon the ability and willingness of scientific students of behavior to solve this challenging problem; and the field is so broad and the need for sound information so urgent that it is scarcely conceivable that too much time or thought can be devoted to it.

Our considerations thus far have dealt only with the first way in which frustration plays a useful, necessary role in the lives of human beings; our discussion has centered upon the frustration which is imposed with a view to bringing about the higher evolution and development of the individual. In its second major role, frustration is somewhat more difficult to justify from the individual's point of view but is nonetheless essential from the broad social standpoint. I refer to those more or less permanent renun-

ciations which are demanded of all members of a group as the price they must pay for the gains of social living. These are the thou-shalt-nots which are essential or are believed to be essential to the preservation of group harmony and stability, notable among which are taboos against manifestations of in-group hostility and aggression, against unrestrained sexuality, and against violations of individual or group rights of possession and use.[8] Freud has repeatedly shown that these "cultural privations," as he has called them, are endured by human beings only with more or less strain, suffering, and protest. In his aptly titled book, *Civilization and Its Discontents,* this writer has formulated the problem as follows: "Human life in communities only becomes possible when a number of men unite together in strength superior to any individual and remain united against all single individuals. . . . This substitution of the power of a united number for the power of a single man is the decisive step towards civilization. The essence of it lies in the circumstance that the members of the community have restricted their possibilities of gratification, whereas the individual recognized no such restrictions."[9]

Elsewhere Freud says: "Now what we have recognized as true of the sexual instincts holds to the same extent, and perhaps to an even greater extent, for the other instincts, for those of aggression. It is they above all that make communal existence difficult, and threaten its permanence. The limitation of aggression is the first and perhaps the hardest sacrifice which society demands from each individual."[10]

Unlike the frustrations imposed for purely pedagogical purposes, which are likely to be relatively temporary and passing, the frustrations which are imposed for the purpose of preserving group solidity are usually persistent.[11] They remain as a perpetual source of

[8] It will be observed that the two forms of human frustration here discussed correspond to the two major aspects of culture, viz., the transmission from generation to generation of useful techniques and skills and the perpetuation and enforcement of regulations and codes governing social conduct.

[9] S. Freud, *Civilization and its discontents* (London, 1930), p. 59.

[10] Cf. S. Freud, *New introductory lectures on psycho-analysis* (New York, 1933), p. 151.

[11] Sometimes, of course, the pedagogical and the regulatory functions of frustration merge, as in the case of the sexual restrictions placed upon adolescents in our culture. On the assumption that marriage in such youthful individuals is socially inexpedient, mature expressions of their sexual impulses is forbidden, with the result that the underlying energies tend to become sublimated and rendered serviceable not only in educational pursuits but in art, science, literature and other creative enterprises. The distinction between the two types of frustration suggested above is nevertheless valid and useful.

human discontent and motivate the never-ending struggle between the individual and society, the enduring antagonism between the one and the many.

Out of this setting emerge a host of problems calling for the most earnest, painstaking scientific attention. A few of these problems are listed below.

1. What are the limits of renunciation which the human organism can tolerate without becoming functionally incapacitated in some way?

2. Which drives and impulses can be denied gratification with relative safety and which ones cannot?

3. Where does socially essential frustration end and human exploitation begin?

4. Do all forms of leadership and government imply some degree of exploitation as well as essential frustration?

5. How does the existence of classes within a society affect the amount of renunciation demanded of the average individual?

6. How is the stability of a society related to the margin of difference between the gains resulting from participation in the group and the amount of frustration which has to be endured?

7. How does an individual's level of aspiration or expectation affect the amount of frustration experienced as a consequence of a given degree of privation or failure?

8. How can the aggressive reactions engendered by those frustrations which are socially essential be best managed and diverted into socially constructive, individually harmless channels?

9. What is the best means of assuring acceptance of socially essential frustrations yet permitting stout-hearted opposition to socially unessential frustrations?

10. To what extent can more direct expression of aggression between individuals within a society be safely tolerated than is now considered admissible in our culture?

11. Can the incidence of criminality, demoralization, and mental breakdown within a culture be controlled by scientific planning of the culture?[12]

12. How do competitive as opposed to co-operative cultures[13] affect the amount of frustration experienced by the constituent individuals and the nature of their reactions thereto?

[12] Cf. J. Dollard, Mental hygiene and a "scientific culture," *Int. J. Ethics*, 1935, **45**, 431-439.

[13] Cf. M. A. May and L. W. Doob, Competition and cooperation, *Social Science Research Council Bulletin*, 1937, No. 25, pp. 191.

There are, of course, other major sources of human frustration besides the two which have been selected as the basis for the foregoing discussion. Man must still bow to certain natural catastrophies, to the necessity to labor in order to live, and to the dissolution of his body by disease and death. There is, however, apparently no necessary reason why these latter sources of frustration should exist, and they may one day be largely eliminated; but the frustrations incident to education and to social regulation must remain. Fortunately, they are of man's own making and, when sufficiently understood, should be capable of being controlled in such a way as to have only the effects which are desired and none, or at least fewer, of the devastating consequences to which they now all too often lead.

III. SOME INTERRELATIONS OF BEHAVIORAL MEASURES OF FRUSTRATION IN CHIMPANZEES

GEORGE M. HASLERUD
University of Tennessee

Frustration can be experimentally manipulated if one is able to change the goal tendencies so that various degrees of negativity to a situation replace or conflict with the previous positive tendencies. One may use either a native drive like sex or thirst and prevent or redirect the satisfaction of the drive, or one may build up a reward-expectation by training and then systematically interfere with the tendency.

For several summers I have had the opportunity to work on the latter problem at the Yale Laboratory of Primate Biology at Orange Park and wish here to acknowledge my thanks. The experimental advantages of studying frustration in as manlike an animal as the chimpanzee are so obvious that they need not be enumerated. Tests were made on six adult chimpanzees, two males and four females, and four child chimpanzees, three males and one female.

Several possible ways of building up an expectation (used purely behaviorally to indicate a relatively persistent activity in a significant direction or mode) might have been used in these experiments, but I found special advantages in a modification of the pull-in technique. By concealing behind a curtain and under a platform the two wheels upon which an endless V-type belt was mounted, one presents the subject with a constant pulling situation. In the food or standard trials a piece of orange in a tin container was clipped on the belt from behind the curtain when the Veeder counter indicated four turns of the wheels or about 90 cm. of belt. The animals pulled with one hand through a hole in an outdoor living cage.

With this apparatus, including a falling door to prevent access to the belt between trials, many variations in the reward-expectancy relationship are possible. One may have:

a. After a standard pull, only an empty food container appears.

b. After a standard pull, the falling door is quickly lowered to end the trial (interruption to the animal).

c. Unlimited pull until the animal leaves the task.

d. Replacement of expected reward by one of low value in the appetite hierarchy.

e. After standard pull, allow the animal to pull the food almost within reach; then interrupt the trial with the falling door.

f. After standard pull, allow the animal to pull the food almost within reach; then have it retrieved behind curtain away from animal.

The first three methods—empty food container, interrupted pull, and the unlimited pull—were used in my work, and it is about them that the following summarizing statements will be made.[1] Let us analyze these three ways. In the training and control trials the tin carriage drawn from behind the curtain always contained food. When the animal first experiences the empty carriage, usually it pauses and then continues to pull, eyes on the curtain, as though a loaded carriage were still to appear. Later the empty carriage became a signal terminating the trial for the animal, for the pulling would stop as soon as the carriage appeared empty. The second type, interrupting the pulling after the standard amount of work, seemed psychologically a very different thing to the animal. Even though the work had been the same as in the first method and the reward as lacking, the animals acted as though the trial were incomplete or interrupted. Some tried to hold up the falling wooden screen. One animal tried to hold on to the belt, even though the wooden screen came down gently on her arm and prevented further pulling. In the third situation where the belt was left exposed as long as the animal wanted to pull on it, at first the animal pulled as much as twenty times as much belt and took ten to twenty times as much time as in the standard trials. Later this became less, but seldom went below twice the standard pull. Some of the animals would drop the pulling for several seconds, resume the task, and alternate thus for a considerable time. Most, however, would drop the task definitely and retreat out of the situation.

The six adult and four child chimpanzees were tested on the three types of frustrating situations, with difficulty levels of one, two, four, and eight successive frustrations. The following quantitative measures were used: the level of frustration the animal can withstand, the time after a frustration before resuming the next trial, the time of performing the trial following a frustration, and finally a description and rating on a scale from 0 to 4 of the emotional and behavioral data of the frustration. Changes in time and behavior

[1] The complete data is in preparation for publication elsewhere.

from the standard or control trials serve as indicators of the degree of experienced frustration.

The results of these experiments indicate that frustration is much more a function of *how* a reward-expectancy is thwarted than of the simple loss of the reward. For all subjects, except one adult male, the interrupted pull leads to the most pronounced frustration, with the unlimited pull second, and the empty food container last. Roughly, they stand respectively in the proportion of 2, 4/3, and 1 times the frustration of the empty food container. This is true for the level of difficulty reached and the behavioral rating, and only a little less clear for the delay and hesitation scores.

Frustration may be revealed among other ways by hesitation at work on the task, reluctance to resume a task after a frustrated attempt, or various amounts of violence and emotion directed toward environmental objects or toward the animal itself. All these criteria show a tendency to be related in the grouped data, but the correlation of individual instances of frustrated behavior ratings is practically zero with delay in resuming the trials and the time of subsequent pull. Evidently the expression of the tensions of frustration can be predicted only very generally. Similarly one finds that in a series of eight successive frustrations, the ratings and time expended do not indicate a steadily mounting tension but a rather sporadic variation, e.g., 2, 0, 2½, 1, etc.

The animals also vary in their expression of and resistance to frustration. Among the six adults, three (two females and one male) showed a low threshold for frustration as judged by our time and rating criteria, while the other three were much less affected and began to show the phenomena plainly only with four to eight successive frustrations. Sex differences are not apparent. The child chimpanzees, however, are so markedly less resistant to frustration than the adults that age before maturity is surely a factor. Three of the four children could not go beyond two successive frustrations. The one that completed work through eight successive frustrating trials had the highest emotional ratings of any animal tested.

While the intensity and modes of expression of frustration tend to be characteristic of each animal individually, a progressive change occurs during the course of the experiment. The adult, and to a much less extent the child chimpanzee, evidently learns to adapt to a frustrating situation. For example, if two successive empty food-container frustrating trials are succeeded by two days of interrupted

trials, the time and behavioral scores are much lower the next day on a return to frustrations of the empty carriage type.

In conclusion, I should like to point out that this experiment has given us the following information about certain measures of frustration: the interruption of a pull results in twice as much observable frustration as the pulling in of an empty food container; the tensions of frustration work themselves out so variously that only with massed data can one observe tendencies; although the adults differ greatly in their resistance to frustration, all of them far excel the child chimpanzees; and finally the animals tend to adapt to the frustrating situations.

Some additional interrelationships between measures of frustration that I have been working on but have not yet unraveled are: the relation of types of frustration to learning; the relation of types of frustration to experimental extinction; the relation between the general and specific effects of a particular kind of frustrating situation; and the factors determining the limits of frustration. I hope that further work may help solve some of these problems in the chimpanzee.

IV. SOME PHYSIOLOGICAL CONSEQUENCES OF FRUSTRATION

QUIN F. CURTIS
Ohio State University

It was Pavlov[1] who first recognized that persistent abnormalities of behavior could be produced in animals as a consequence of a controlled laboratory procedure. One of the experiments of his laboratory in particular has been frequently quoted and has determined the direction of much which has been done since. A dog was trained by the conditioned reflex method to discriminate between different visual patterns; the presentation of a circle of light was always followed by food, while the appearance of an ellipse whose axes bore the ratio of 2:1 was never so rewarded. To the dog, the circle soon became a conditioned stimulus to salivation, while the ellipse acquired the negative property of inhibiting salivation.

When the ellipse was caused to become more and more nearly circular, the dog continued to make perfect discriminations until the ratio of the axes had become 8:9. Now after several weeks of imperfect discrimination of the two, the dog's behavior suffered a sudden change. The differentiation of circle from ellipse broke down completely, and he became negative to all stimuli. As training continued, this negative behavior passed over into continual excitement, so that the dog, which had formerly stood quietly on his bench, now was constantly struggling and howling. Careful retraining on the easier discriminations of circle from ellipse required more time than had the original training on the same problem. When the difficult differentiation was again attempted, the animal quickly broke down as before, and training had to be abandoned.

The theory of cortical action by which Pavlov accounts for the enduring disturbance engendered by this experiment does not concern us, but simply the fact that some features of this experimental technique of frustration strained the dog's nervous system to the breaking point.

[1] I. P. Pavlov, *Lectures on conditioned reflexes* (New York, 1928).

In the extensive researches of Liddell and his associates upon the conditioned behavior of sheep and swine, the features of Pavlov's method which are productive of nervous strain have been further delimited. The general method is similar to Pavlov's: the animal is induced to submit to the restriction of a harness which limits his freedom of locomotion, and to remain alert and quiet except when responding to stimulation. The response utilized with the sheep is a delayed motor reflex based on application of a mild electric shock to the foreleg. In the trained normal sheep, this stimulus evokes a brisk flexion of the leg, but no tantrum or observable "emotional" behavior.

Some of the factors which Anderson and Liddell[2] have shown are likely to damage the nervous system in the sheep are:

1. The necessity of inhibiting or restraining a conditioned response beyond the animal's capacity to do so. This has been accomplished in two ways. (1) A conditioned reflex with a moderate delay of 5 seconds between onset of the signal and application of the shock may be elicited too frequently or with insufficient rest interval between tests. (2) An excessively long delay (30 seconds) between onset of signal and application of shock may be required, straining the capacity of the sheep to withhold response.

2. Confusion of positive and negative stimuli. For example, a positive reaction to a metronome beating at 120 ticks a minute was well established; then a series of slower rates (50, 60, 72, 84, 92) were made negative by presenting them without the shock. After these differentiations were established, a special daily test presented the whole gamut of rates in turn, the positive rate (120) being interposed between each of the negatives. After a few weeks of this procedure, the animal gradually became negative to all rates. When the positive rate alone was presented for a few weeks, the positive response returned in exaggeratd form, and was extended to all the negative rates, even those which had formerly been easiest to discriminate. Several factors were probably operating here: (1) the animal was required to make delicate auditory discriminations, and (2) the number of successive discriminations and the total time consumed in the daily tests may have been excessive.

3. Alternation of excitation and inhibition. An attempt was made to establish in the sheep a rhythmic alternation between excitation and inhibition—action and restraint. The sheep was pre-

[2] O. D. Anderson and H. S. Liddell, Observations on experimental neurosis in sheep, *Arch. Neurol. & Psychiat.*, 1935, **34**, 330-354.

sented at 7-minute intervals with alternate auditory stimuli (pure tones) one of which was reinforced by shock, the other not. Unfortunately, as the animal always responded positively to both tones, there was never any evidence that he could discriminate between them. Neurotic behavior began to appear within a few weeks. After a rest, he was trained to react to a buzzer followed by shock, with rest intervals of 7 minutes. The neurosis remained unchanged. Anderson and Liddell believe that the regular temporal alternation of positive and negative stimuli places heavy strain on the animal's nervous system.

The interesting fact for our purposes is that whatever the means of inducing the neurosis, the manifestations of it are remarkably constant. These manifestations may be characterized in at least three ways: (1) The behavior changes, in the sheep at least, are permanent, enduring for the life of the individual. (2) They are new, and do not except superficially resemble a regression to an earlier habit-pattern. (3) They involve not only the animal's overt adjustments to the environment, i.e., his response to a conditioned signal, but many of his homeostatic physiological relationships such as the speed and regularity of the pulse and of respiration.

The gross changes which occur in the behavior of the sheep in the laboratory situation have been described earlier.[3] The sheep, previously co-operative, becomes refractory and resists being taken to the laboratory and harnessed in the Pavlov frame. The breakdown is usually initiated by an inhibitory phase, in which conditioned responses are for a time suppressed. If training is continued, the animal passes over into an excitable phase, where conditioned reflexes are more violent than normal, and positive responses are given to stimuli that were formerly negative, discrimination between stimuli having completely broken down. During the interval of several minutes between stimulations, the animal cannot maintain its former state of alert quiet, but exhibits at frequent and irregular intervals spontaneous tic-like movements of the reaction limb which Anderson compares to the fidgeting of a nervous child. This is probably the most characteristic overt manifestation of the neurosis in the sheep.

There are also significant and enduring differences in the relatively intrinsic functions of respiration and heart action. The

[3] Anderson and Liddell, *op. cit.*; H. S. Liddell, W. T. James and O. D. Anderson, The comparative physiology of the conditioned motor reflex, *Compar. Psychol. Monog.*, 1934, **11**, No. 1.

respiration of the neurotic sheep as compared to the normal is irregular, rapid, and may be punctuated by gasps or breath-holding.[4] Of five pigs studied,[5] one which developed a sleep-like state of complete inhibition for a time exhibited during this period a characteristic "bumpy" form of respiration which could be used to identify this animal's records. Sutherland and Wolfe, and others, have pointed out that the spirograms of neurotic patients show peculiarities which serve to "fingerprint" the individual.

Differences between normal and neurotic animals may be demonstrated during the barn and field life of the pig or sheep as well as in the laboratory situation. The diurnal activity cycle of normal and neurotic sheep was studied by recording the 24-hour gross activity upon scale platforms. Records show that the activity of the normal sheep is greatest during the day, rising to a peak at feeding time, but ceasing almost completely for an hour or so at a stretch during the night. The neurotic animal's record, on the other hand, shows bursts of activity spaced a few minutes apart during most of the day and night. It is as though the day's total store of energy was frittered away in over-responding to an endless succession of slight stimuli. This is reminiscent of the already mentioned inability of the neurotic sheep to inhibit or reserve his defensive leg reactions until the significant time for action arrives.

A 24-hour sampling of the pulse rate also shows a distinction between the normal and neurotic sheep. The neurotic heart exhibits greater variability of rate, both day and night, than the normal.

Some evidence that the behavior traits of the neurotic sheep make a clinical entity is to be inferred from their constancy in the cases observed, and from the action of drugs. Liddell, Anderson, Kotyuka, and Hartman[6] showed that subcutaneous injections of adrenalin had the effect of depressing the conditioned leg flexions in anticipation of the shock, while increasing the sheep's irritability during the rest interval, as measured by the spontaneous movements of the reaction limb. Extract of adrenal cortex, on the other hand, had the reverse effect, quieting the sheep during the rest interval and increasing the vigor of the conditioned response to the signal.

[4] Anderson and Liddell, *op. cit.*, p. 17.

[5] Q. F. Curtis, The experimental neurosis in the pig, reported at Minneapolis meeting of American Psychological Association, 1937; G. F. Sutherland, Experimental neurosis in swine, reported at International Physiological Congress, Zurich, 1938.

[6] H. S. Liddell, O. D. Anderson, E. Kotyuka and F. A. Hartman, Effect of extract of adrenal cortex on experimental neurosis in sheep, *Arch. Neurol. & Psychiat.*, 1935, **34**, 973.

Its effect in this respect was to make the neurotic sheep resemble the normal.

A type of behavior seen in the conditioned response situation which seems to me to bear on the nature of conflict is what I should call the dissociated activity of reaction systems. It has been pointed out by Pavlov and others that the conditioned response can only artificially be considered a unitary segment of behavior. The conditioned behavior of the dog toward a food stimulus, for example, is a complex of which the behavior of the salivary gland is a very small part, selected for analysis because its behavior is so simple; it can only secrete or fail to secrete. But the dog's total behavior also includes such items as orienting movements of the head and body, changes of galvanic skin resistance, approach to the food, snapping and eating, gastric flow, and appropriate adjustments of cardiac and respiratory activity.

These segments of behavior have the appearance of an integrated, mutually dependent whole when the mature conditioned response is examined. The entire animal seems to be co-ordinated toward one end or "purpose." But when the conditioned reaction is in process of formation or is being disrupted by extinction or inhibition, the picture of integration is not so complete. In the formation of the conditioned response, the individual reflexes appear in order, and in extinction, disappear roughly in reverse order.[7] Moreover, when the conditioned response is disrupted, as by the inhibiting agents of a "conflict" situation, there may be a splitting or *dissociation* of these behavior segments into elements which may even work at cross-purposes to one another. For example, a dog may salivate at the presentation of a signal meaning food, but fail to make the motor response which would bring his head to the food dish.

In a paper reported before this group last fall, I described how a pig, faced with a conflict situation (i.e., approach or withdrawal from the apple-box) would, at a certain stage of training preceding the breakdown, execute a part of both responses, figuratively tearing himself apart in the middle.

I consider it possible that the "conflict" here may consist in the dissociation from a larger pattern of part-reactions which are evoked simultaneously by an equivocal stimulus. May not a more adequate sampling of the many processes of the body reveal deep-seated disharmonies fundamental to an experimental understanding of the conflict problem?

[7] Liddell, James, and Anderson, *op. cit.*

V. THE EFFECT OF FRUSTRATION UPON COGNITIVE ABILITY

ROGER G. BARKER
University of Illinois

I wish to discuss a problem which appears not infrequently in the psychological literature, but which is almost always considered as propaedeutic to other primary considerations. This is the problem of the effect of frustration upon mental efficiency. This is an important aspect of the general problem of the causation of fluctuations in the level of an individual's mental ability—a problem which has largely been overlooked in the great interest in the problem of differences among individuals in intelligence.

Reference to the effects of frustrations upon the cognitive abilities is sometimes made in discussions of the relation of learning and emotion, in considerations of the motivation of behavior, and in writings about attention, distractions, and annoyances. In all of these cases, however, emphasis is usually placed upon the effect of the frustration upon ability to overcome the difficulty from which the frustration arises. This is only loosely related to the problem raised here. It is asked, rather, what happens to ability when an individual gives up and turns to other activities? What is the effect of a frustrated need upon the intellectual level of behavior not directly related to the satisfaction of that need?

When considered in the context of the former problems, there is a clear tendency to consider frustrations of any severity as harmful to intellectual behavior. On the other hand, there is a current of thought where one finds it common to consider frustrations as favorable to creative behavior of a high order. We are all familiar with the saying that starvation is an aid to artistic creation. Particularly in considerations of individual development one finds the belief expressed that only by suffering privations and hindrances does an individual develop his creative abilities optimally.

Such opposed views as these may be due, on the one hand, to the fact that the terms frustration, thwarting, hindrance, etc., designate a category of experience which includes fundamentally different psy-

chological situations. On the other hand, it may be that frustrations of different intensities or qualitative characteristics have opposed effects.

It is necessary, therefore, to define exactly the sort of frustrating situation to be considered in the following discussion. By a frustrating situation will be meant any situation in which an obstacle—physical, social, or conceptual, personal or environmental—prevents the satisfaction of a desire. It should be emphasized that in this definition the situation is defined from the point of view of the experiencing individual. This serves to exclude problem situations in which the individual thinks he is progressing to a solution or anticipates such progress. It includes only those situations where the subject himself accepts the obstacle as impassable, the solution as impossible.

Such frustrating situations may be represented as follows:

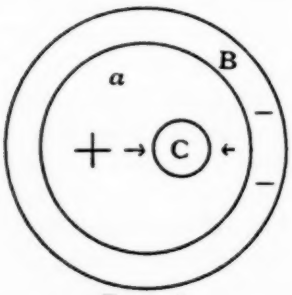


FIGURE 1
C = child
B = negative barrier
a = region of free activity.

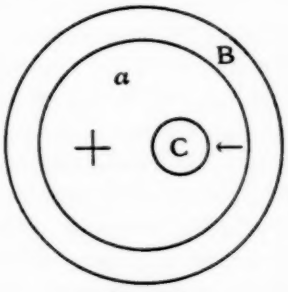


FIGURE 2
C = child
B = neutral boundary
a = region of free activity.

The problem may be stated in terms of these diagrams thus: Do the cognitive abilities in region *a* of Figure 1 differ from such abilities in region *a* of Figure 2? An investigation by Barker, Dembo, and Lewin[1] bearing upon this problem, and reported to these meetings last year, revealed that differences do occur, that frustration leads in some cases to a lowering of the cognitive level and in some cases to an increase. In that experiment the behavior of children in a satisfying play situation was compared with their behavior in the identical physical situation, when its psychological significance had been changed to that of a frustrating situation. Thirty children, aged two to five years, were observed individually on two occasions: first, in a standardized playroom; second, when the room had been

[1] To be published soon in *University of Iowa Studies in Child Welfare.*

enlarged and play materials greatly surpassing in attractiveness those available on the first occasion had been added. The play objects of the first play period were incorporated into the new materials as parts of more attractive wholes. After the child was thoroughly interested in the new toys, the situation was changed to a frustrating situation: the new toys were made unobtainable, though remaining visible, by placing a barrier of wire netting where the wall of the original playroom had been. In the present paper it is proposed to discuss some processes which may be hypothesized to account for the differing effects of such frustration upon the cognitive level.

In constructing these hypotheses it has been assumed that as a first approximation the psychological organism can be considered to consist of two parts: an inner system of psychological needs, and an outer, surrounding system comprising the perceptual, cognitive, and motor functions. The perceptual-cognitive-motor systems mediate between the reality of the outer world and the needs of the organism. An important property of these systems, as of all good media, is their plastic nature; they readily assume any structure imposed upon them by the outer world, on the one hand, or by the inner needs of the individual, on the other, within the limits of their intrinsic natures. We have further assumed that the cognitive level of behavior depends in part upon the complexity and integration of the organization obtaining in the perceptual-cognitive-motor functions. This complexity of organization depends in part upon the degree of differentiation; i.e., upon the number of part systems into which the functions may be divided. An analogous condition exists with the physical organism, of course, where complexity of organization is limited by the number of cells; obviously a ten-celled mammal is an impossibility. The complexity of organization depends, also, upon the strength of the inducing forces operating to effect the organization. Anything which reduces the functional differentiation of the perceptual-cognitive-motor systems reduces the maximal level of cognitive functioning of which the organism is capable.

There appear to be two cases in which a reduction in the cognitive level of behavior occurs in frustration. In both of them frustration involves a conflict for control of the organization of the perceptual-cognitive-motor functions between the forces corresponding to the frustrated need, on the one hand, and the forces corresponding to needs which may be satisfied in reality, on the other.

In this situation there may result a division of the perceptual-cognitive-motor functions between two simultaneous actions; e.g., the individual may daydream or talk about his lost love while at the same time responding to the exigencies of the immediate reality. In such a case the number of parts of the perceptual-cognitive-motor functions participating in each activity is less than that maximally possible when no simultaneous division of these functions occurs; thus neither of the simultaneous activities can exhibit the maximal level of cognitive functioning of which the organism is capable.

On the other hand, the outcome of this conflict of needs for control of the perceptual-cognitive-motor functions may be complete dominance by the forces corresponding to one of the needs. The length of the period of dominance may be very short or it may be relatively permanent; in any case, while it lasts the competing interest receives no direct representation in the organization of the perceptual-cognitive-motor functions; it is completely repressed. In the experiments mentioned, this condition occurred not infrequently. In the most conspicuous cases there occurred a frequent shift from complete absorption in a neutral activity to complete preoccupation with the obstructed goal. In these cases the level of ability shown in the neutral action was distinctly lower than that which occurred when shifting between it and other neutral activities took place. In other words, actions which occur in a context of frustrated activities are on a lower creative level than similar actions occurring in a context of nonfrustrated activities.

In terms of the postulates stated above it is clear that anything which reduces the plasticity of the perceptual-cognitive-motor functions reduces the complexity of their organization obtaining for a given strength of force, and hence reduces the cognitive level of behavioral functioning. Under the conditions existing in frustration where there is a conflict between the forces corresponding to simultaneously aroused need systems for control of the perceptual-cognitive-motor functions, one would expect the plasticity of these systems to be decreased. They are no longer in a state of indifferent equilibrium ready to be formed by every force which operates, but will respond only to forces greater than those already acting. These functions are no longer plastic, but have a structure of their own which has to be destroyed before a new structure can be imposed. Under these conditions it is inevitable that the cognitive level of behavior should be lower in frustration.

Let us turn now to those cases where frustration leads to an increased level of cognitive functioning, and such cases are well

established experimentally. It seems possible to identify at least three quite different types of processes. One process may occur in the case of individuals who are lethargic generally or who happen to be disinterested in the particular neutral activity under consideration. Very frequently in these cases, the introduction of a frustration markedly raises the cognitive level of the neutral activity, although this is not always the case. It has already been suggested that a certain minimal strength of inducing force is necessary in order to establish the optimal complexity of organization which a given perceptual-cognitive-motor system permits. The terms *lethargy* and *disinterest* indicate just this: that the forces corresponding to the dominant needs are below optimal. They may be so weak that even with a maximally plastic medium, maximal organization and integration are not obtained. It may happen in these cases that the introduction of a frustration which raises the strength of the forces acting upon the perceptual-cognitive-motor systems above the minimal critical level will more than compensate, in terms of complexity of organization, for the loss of plasticity or division of the medium due to conflict. It is probable that this effect is limited to relatively mild frustrations.

The second type of reaction to frustration which frequently results in an increase in the cognitive level of a neutral action occurs when the neutral action becomes a substitute for the frustrated one. These are cases of sublimation. In these cases the tension systems corresponding to the frustrated and the neutral needs become identical, and their forces supplement rather than conflict with each other in organizing the perceptual-cognitive-motor functions. In these cases the complexity of organization of the neutral substitute action will usually be maximal and may result in an increased cognitive level of behavioral functioning.

A third type of reaction to frustration is closely related to this, but it is linked with the negative rather than the positive aspects of frustration. Behaviorally this reaction is characterized by an escape into reality, a losing of oneself in a neutral task. All frustrations have a negative component deriving partly from the pain of the barrier. If this component is dominant, there is a psychological locomotion away from the region of the frustration. In a way this respresents the obverse of true sublimation, for rather than dynamical identity with the frustrated need, a neutral action in order to be an adequate refuge from intolerable frustration must have dynamically complete independence of the frustrated need. It is undoubtedly difficult in practice to differentiate refuge from

sublimation, but theoretically, and practically too, there is a very important difference. In true sublimation the psychological organism is unified; there are no conflicting needs; in refuge the need corresponding to the frustrated goal presents a conflicting force in the organization of the perceptual-cognitive-motor systems, although frequently the forces of the negative component are so strong that a high degree of cognitive complexity and integration are obtained.

In conclusion, a few of the main points may be emphasized:

1. Intellectual ability varies with the psychological situation of the individual.

2. Frustration may result in a reduction or in an increase in the efficiency of the cognitive abilities in general. Which of these effects is obtained depends upon the nature of the needs and actions involved, the strength of the forces, and the properties of the particular perceptual-cognitive-motor systems. This constitutes more evidence that the psychological organism is a highly unitary system in some respects.

3. Processes have been proposed which account in a not unreasonable way, it is hoped, for the interrelation of these particular cognitive and motivational functions. It would appear that only by constructing and "proving" such hypotheses will the idea of the unity of the organism (so far as it is true) avoid the status of a slogan or an epithet and become a useful concept.

4. It is clear that the explanations proposed have a close relation to theories of intelligence which are based upon statistical studies of individual differences in intelligence. They point to the importance of strength of force, degree of differentiation, and plasticity as factors of importance in constructing a theory of intelligence. But entirely aside from the truth or falsity of the particular hypotheses proposed, they point to the importance of frustration as a technique for investigating the nature of the intellectual abilities. One is impressed with the extent to which we are dependent upon studies of individual differences for our knowledge in this field, and one might profitably raise the question whether by such approaches it is ever possible to return to the nature of mental organization obtaining in a particular concrete individual—which is, after all, our ultimate aim. In any case the study of differences in a particular individual's intelligence under differing conditions should supplement in important respects the individual differences approach, particularly since the former method has all the advantages of a thoroughly experimental technique.

VI. A GENERAL OUTLINE OF FRUSTRATION

SAUL ROSENZWEIG
Worcester State Hospital, Worcester, Massachusetts

In bringing this session to a close I wish to integrate in some measure what has been said here with certain of the work which has been done or may in the future be done with frustration as its orientation. You will of course realize that I am speaking only in the most general terms because of time limitations.

Types of Frustrating Situations

If frustration is broadly defined as failure in biological adjustment, the first general question which arises in a systematic analysis of the phenomenon concerns the general classes of frustrating situations to which human beings may succumb. Three such broad classes may be distinguished—privations, deprivations, and conflicts—each of which may be further characterized as having its source without or within the individual. First, there is a type of frustrating situation in which the individual needs or wants some general object or end-state which is ordinarily supplied by the external world but which is now not to be found there—general negative exogenous frustration or *external privation.* For example, a man on a desert island is sexually in a state of tension but no woman is available to him, or he is hungry but can find no food. In the second place may be distinguished a type of frustration in which the individual suffers not because some general property is lacking in the external world but rather in himself—general negative endogenous frustration or *internal privation.* A common example in the sexual sphere would be the situation of a person who has insufficient attractiveness for the satisfaction of his mating drive. Next are two types of frustrating situations which are also negative but in the sense of a rather specific loss rather than a general lack. One such situation is characterized by the loss of some environmental object or end-state to which strong specific attachments have been formed in the past—specific negative exogenous frustration or *external deprivation.* Thus, a man is deprived by death of the woman with

whom he is in love, or the house he has lived in for many years is destroyed by fire. A fourth situation involves the loss not of anything environmental but of some specific attribute formerly possessed by the individual and inextricably interwoven with his previous habits—specific negative endogenous frustration or *internal deprivation.* For instance, Abelard is castrated by the jealous guardian of Heloise; Samson's hair is shorn and he loses his great strength. In the fifth place may be distinguished a type of frustrating situation in which it is not the absence of something in the external world but rather its unfortunate presence which tends to thwart the subject—positive exogenous frustration or *external conflict.* For instance, suffering from unsatisfied sexual cravings, a man meets an attractive woman only to find that she is the faithful wife of someone else. The presence of the marriage pact, representing social sanctions and regulations, stands in the way of satisfaction by arousing certain needs for security and integrity which conflict with the sexual needs. Sixth, and last, is a type of frustrating situation in which an obstacle is present in the individual's own personality by virtue of its organization which prevents the attainment of certain satisfactions—positive endogenous frustration or *internal conflict.* For example, a man is much attracted by a woman erotically but cannot find satisfaction because, whether with more or less consciousness, she is identified in his mind with his mother or sister and thus arouses certain needs for integrity or security which conflict with the sexual needs. In this class are found the sort of psychological conflict with which psychoanalysts are usually concerned; for instance, the so-called Oedipus Complex. It should be noted in passing that both external and internal conflict situations are here regarded as varieties of frustration, but differ from privations and deprivations in that conflict involves the frustration of one need by another need.

It will be readily seen that, making due allowance for combinations, blends and transitional varieties of these "pure cultures," the foregoing types of frustrating situations are logically exhaustive. What is more, they seem also to be exhaustive psychobiologically. How true this is may be seen from the ease with which the various kinds of human unhappiness for which the aid of the psychiatrists is or should be sought may be assigned to these categories: the destitute (external privation or deprivation), the delinquent (external conflict), the defective (internal privation or deprivation), and the disordered (internal conflict).

Frustration Tolerance

The second natural question in an analysis of frustration may be put as follows: Given an individual in any one of the frustrating situations just described, with what degree of tolerance is he apt to meet it? A concept like frustration tolerance has long been implicit in the thinking of abnormal psychologists and of psychiatrists, but the explicit recognition of it would seem to have considerable value. With this purpose in mind frustration tolerance might as a first approximation be defined as the capacity of the individual to withstand a given frustrating situation without distorting the so-called "objective" facts of the life situation. One must recognize that the frustration tolerance of an individual need not exist at the same level throughout his personality; in other words, areas of low or high frustration tolerance may be hypothetically posited. Such an hypothesis might even provide a working definition of the difference between the psychotic—in whom a generalized low frustration tolerance would be said to obtain; the neurotic—in whom certain circumscribed areas of low frustration tolerance (complexes) might be posited; and the normal individual—in whom a relatively high frustration tolerance would usually be found throughout the personality.

Individuals presumably differ, either constitutionally or as a result of experience, in the possession of this capacity. It would be easy to make it plausible that the educational process in childhood, especially as related to discipline, consists largely in the building up of frustration tolerance or the encouragement of its natural maturation. Frustration tolerance appears to be fostered by allowing the child to experience small amounts of frustration—amounts which he can negotiate without reacting inadequately. Such optimal doses of frustration are probably indispensable as an incentive to learning of any kind. But if, on the one hand, less than this ideal amount of frustration is experienced over a long period of the individual's early life, insufficient frustration tolerance will be developed for meeting the frustrations of later years. Such persons are said to be immature because "spoiled" or overindulged. If, on the other hand, the child is frustrated much beyond his resistance, areas of low frustration tolerance (complexes) may be created and the ground prepared for behavior disorders. The psychoanalysts have taken cognizance of some of these facts in describing a transition from the primary to the secondary functions or from the pleasure to the

reality principles. However, the concept of frustration tolerance seems preferable because it is quantitative rather than dichotomous, and has definite implications for experimental measurement. Some day we may be able to report frustration tolerance quotients as we now attempt intelligence quotients.

Some of the research problems connected with frustration tolerance have been outlined by Dr. Mowrer in his paper. Dr. Haslerud has given experimental examples of the increase of frustration tolerance in chimpanzees with age, and some of my own work[1] with children corroborates his findings.

Re-education or psychotherapy is readily interpreted as a process of building up frustration tolerance by allowing the patient, as in the psychoanalytic situation where frustrations are constantly discussed, to experience small or tolerable doses of frustration until resistance is gradually developed and the areas of low frustration tolerance disappear.[2] The recent experiments of Keister and Updegraff[3] are examples of such re-education.

A more critical definition of the concept of frustration tolerance emerges from the answer to the third and last general question which an analysis of frustration involves—the question as to the ways in which an individual may react to frustrating situations.

Types of Reaction to Frustration

Adequate—Inadequate

In discussing frustration tolerance it has been pointed out that reactions to frustration may differ in their degree of adequacy. The higher the frustration tolerance, the greater the presumed adequacy of the reaction. It now becomes necessary to define somewhat more exactly the criteria by which adequacy is to be evaluated.

One of these criteria is social in reference. From this standpoint a response is regarded as adequate in so far as it does not misrepresent the facts of the frustrating situation as understood by the majority of those individuals who are in a position to observe

[1] Preferences in the repetition of successful and unsuccessful activities as a function of age and personality, *J. Genet. Psychol.*, 1933, **42**, 423-441; The preferential repetition of successful and unsuccessful activities, *Psychol. Bull.*, 1936, **33**, 797.

[2] See S. Rosenzweig, A dynamic interpretation of psychotherapy oriented towards research, a forthcoming publication.

[3] M. Keister and R. A. Updegraff, A study of children's reactions to failure and an experimental attempt to modify them, *Child Development*, 1937, **8**, 241-248.

but are not involved in the frustration. An ideal substitute for such a consensus would be some one omniscient individual who views the situation in complete detachment. A criterion of this social sort is invoked in extreme instances for deciding whether a person should be committed to a mental hospital—whether, for example, he has hallucinations or delusions.

A second criterion centers attention upon the individual's behavior as such. According to this individual criterion, reactions are regarded as adequate in so far as they are progressive rather than retrogressive in implication. Responses which tend to bind the subject to his past unduly or which interfere with reactions in later situations are less adequate than those which leave the individual free to meet new situations as they occur. Retrogressive responses in a frustrating situation make for inappropriate reactions on later occasions. Progressive behavior, on the other hand, favors the natural development of the individual in accordance with his own potentialities and with the demands of the environment as these arise.

An instance of an adequate reaction would be found in the countering of an argument against one's ideas by legitimate attempts to uphold one's views instead, say, of backing down through excessive fear of striking out inappropriately through rage. It should be clear that fear and rage are not always to be regarded as inadequate modes of response; sometimes they are well warranted by the facts of the environmental situation. While such emotion may in one sense interfere with effective adjustive response, it may in other respects, e.g., through appropriate autonomic mobilization, facilitate such behavior. Similarly it would not be an inadequate mode of response if a person who was starving suffered pangs of hunger due to stomach contractions—however much this might be a confession of physical inadequacy against environmental odds—because no inappropriate reaction would here be involved. If, on the other hand, a person suffering hunger began to blame someone in his social environment when the condition had arisen from factors over which this accused person had no control, and if this reaction were actually based upon the hungry person's low frustration tolerance—he might secretly feel it a reflection upon his capability that he had no food but might lack the ego-strength openly to accept this fact—then a truly inadequate reaction to frustration would be involved.

It hardly requires to be pointed out that from the biological

standpoint even inadequate modes of response are to be regarded as adjustive in aim—the best of which the organism is capable under the existing conditions, internal as well as external. Presumably an attempt is being made even in cases of psychologically inadequate reaction to preserve integrated functioning by keeping the so-called "ego" intact or by re-establishing equilibrium through the satisfaction of perseverating needs. When these ends cannot be achieved in a psychologically more adequate way, less adequate ones are resorted to. Similarly the body in its resistance to infectious diseases avails itself of nondisruptive protective reactions as long as this is possible but may eventually have to utilize defenses which as symptoms of the disease seriously interfere with the patient's normal behavior.

It should be recognized that the above criteria of adequacy require further definition. An important problem for research is here involved.

Direct—Indirect

A second question regarding reactions to frustration concerns their directness. Some responses are patterned after the frustrating situation in a relatively straightforward way, whereas others have in greater or less degree the character of a substitute. Such substitutes are sometimes easy to identify, but are often highly indirect and symbolic. Factors which make for the inhibition of the direct response at the same time prepare the ground for such substitute reactions. It is understandable that many inadequate modes of response to frustration will have such an indirect character. It is not to be overlooked, however, that many adequate reactions are also substitutive.

Defensive—Perseverative

A third important characteristic of reactions to frustration is concerned with their role in the economy of the organism. In some instances the response is defensive in nature; the integrity of the so-called "ego," the organization of the personality, is at stake and is protected. Such behavior has recently been subjected to a certain amount of experimental study.[4] Other reactions to frustration are

[4] Cf. S. Rosenzweig, The experimental study of repression, in H. A. Murray, *et al., Explorations in personality* (New York, 1938); R. R. Sears, Initiation of the repression sequence by experienced failure, *J. Exp. Psychol.*, 1938, **20**, 570-580; Experimental studies of projection: I. Attribution of traits, *J. Soc. Psychol.*, 1936, **7**, 151-163; II. Ideas of reference, *ibid.*, 1937, **8**, 389-400.

perseverative (perseverant or persistent) in character; they seem to have the function of obtaining ultimate gratification for frustrated needs in spite of the immediate impasse that may have been encountered.

Defensive reactions may, of course, be adequate or inadequate and direct or indirect. Examples of direct adequate and inadequate responses have already been given in the discussion of adequacy. An indirect adequate reaction of defense would, for instance, be involved if a person threatened by an armed burglar called upon the police for help instead of attempting to cope directly with the situation single-handed. Of much greater import, however, are the inadequate forms of indirect defense reaction. On the basis of certain observations elsewhere reported[5] such behavior in frustrating situations may be tentatively classified as follows: (1) Extrapunitive[6]—when the individual tends to blame the external world, reacts with anger and hostility, and psychologically defends himself by what the psychoanalyst describes as the mechanism of projection. An ego which fears blame from others thus protects itself by blaming others instead. The most striking examples of this type of reaction to frustration are found among paranoid patients. (2) Intropunitive—when the individual tends to blame himself, reacts with feelings of remorse and guilt, and employs the mechanisms of defense called by the analyst displacement, isolation, and undoing. An ego which fears blaming others thus gains security by blaming itself instead. Classical examples of this type of reaction are found among obsessional and compulsive neurotics. (3) Impunitive—when the individual tends to pass over frustrating situations lightly, as if they represented unavoidable accidents for which no one was to blame. Here the motive of conciliation predominates, and the commonest mechanisms of defense are self-deception and "repression." An ego which fears loss of love thus protects itself from alienation by refusing to blame anyone or anything, emphasizing the inevitable and the excusable instead. Examples of this type of reaction are most strikingly found among hysterical patients.

[5] S. Rosenzweig, A test for types of reaction to frustration, *Amer. J. Ortho psychiat.*, 1935, **4**, 395-403.

[6] The terms *extrapunitive, intropunitive,* and *impunitive* have been used and are here used to describe inadequate defense reactions. It must not, however, be forgotten that all of these inadequate responses have their adequate counterparts. It even seems desirable to employ the above terms generically instead of preempting them for the inadequate types of response. By this usage the reaction would be described not only as extrapunitive, for example, but also as adequately or inadequately so.

Besides these defensive types of reaction to frustration there are the perseverative ones already mentioned. Such reactions aim not so much at protection of the ego as at the ultimate satisfaction of the frustrated need in spite of the immediate frustrating circumstances. While the aim of the defensive responses is to preserve the integrated organization of the personality as a whole, perseverative reactions are more concerned with the consummation of particular drives. Behavior of the latter sort may be either directly or indirectly perseverative, i.e., the striving may be in the very terms of the frustrating situation or frustrated activity, or may be only secondarily or remotely related to these. Direct perseverative reactions may be in the nature of persistent or perseverant goal-oriented behavior which has some possibility of success, in which case they are to be regarded as adequate; or they may resemble what Hamilton[7] has called "persistent non-adjustive reactions," in which case they are clearly inadequate. Indirect perseverative reactions to frustration, on the other hand, comprise what are often characterized as substitute modes of gratification. These may also be regarded from the point of view of their adequacy, particularly from the standpoint of the progressive-retrogressive or individual criterion. At the adequate end of such a continuum stands sublimation, as understood by the psychoanalysts, and at the inadequate end regression. Other substitute gratification mechanisms would fall somewhere between these two end-points. A number of experiments done in the setting of Lewin's psychology[8] furnish concrete data in this connection. Some of David Levy's[9] experiments on dogs and chickens are also pertinent here.

Specific—Nonspecific

There is a fourth important distinction to be noted among responses to frustration. In addition to the *specific* defensive and perseverative reactions already described, there are certain *nonspecific* ones. Nonspecific reactions to frustration, unlike specific ones, do not have a clearly elaborated symbolic relationship to the frustrating situation in question. They are more physiologically structural than psychologically dynamic in nature. They too may

[7] G. V. Hamilton, *An introduction to objective psychopathology* (St. Louis, 1925), p. 251.

[8] K. Lewin, *A dynamic theory of personality*, trans. D. K. Adams and K. E. Zener (New York, 1935), chap. vi.

[9] D. M. Levy, Experiments on the sucking reflex and social behavior of dogs, *Amer. J. Orthopsychiat.*, 1934, **4**, 203-224; On instinct-satiation: an experiment on the pecking behavior of chickens, *J. Gen. Psychol.*, 1938, **18**, 327-348.

be described as defensive or perseverative, adequate or inadequate, direct or indirect. Instances of nonspecific, defensive direct reactions to frustration are perhaps found in the phenomena of fatigue, inhibition, and sleep as interpreted by Pavlov. The normal daily cycle of sleep and wakefulness may serve to illustrate the adequate types of such defensive reactions of the organism. When, as presumably occurs in neurasthenia, fatigue begins to be a substitutive reaction to frustration, the indirect and at the same time, in this instance, the inadequate modes of nonspecific response are exemplified. Nonspecific perseverative direct reactions are illustrated by the phenomena of distraction and reduced efficiency which supervene upon frustration. A failure of inhibition is probably involved here, but the criteria of adequacy and inadequacy are not yet clear. Indirect reactions of this category may be said to occur when, for example, distractions are exploited as substitute outlets for frustrations in other spheres of activity. It is possible that an instance of such surrogate behavior of the inadequate sort underlies the impunitive reaction to frustration and if so one would here find an interesting coalescence of a nonspecific perseverative reaction with a specific defensive one.

The studies just reported by Dr. Barker would appear to fall in part at least under the heading of nonspecific reactions, as would also those discussed by Dr. Curtis. The difference between their findings is obviously due to the singling out of more strictly psychological or more strictly physiological reactions for observation.

The above description of reactions to frustration should not be construed as an attempt at formalistic classification. The four characteristics discussed are obviously not dependent upon each other in any categorical way, nor are they the only aspects that might have been accorded special treatment. We are just at the beginning of experimental research in the field of frustration, and the value of our classifications and analyses must ultimately be tested by controlled observation. If the preceding outline suggests problems for such research and gives at least a semblance of integration to the complexity of the factors with which we have to deal, it will have served its purpose.

In so far as success may in the future be achieved with the aid of the frustration formulation, the co-operation of psychopathological, especially psychoanalytic, principles with experimental methods should testify to it. From such a *rapprochement* the con-

cepts of psychoanalysis ought to profit by new precision and consistency which will add to their rich connotation that greater definiteness of denotation so long desired by certain psychologists and psychiatrists. This reorientation should also benefit academic psychology by bringing within its purview problems which are of crucial importance in everyday life.

From an even broader perspective one might hope that a psychology of frustration would tend to lessen the artificial division which now separates normal from abnormal psychology, and abnormal psychology from theoretical psychiatry. Once psychopathologists begin to employ experimental methods as envisaged here and psychologists of the normal begin to deal seriously with problems other than sensation, perception, and rote learning, one common set of dynamic principles should naturally emerge.

CURRENT TRENDS IN RESEARCH ON PERSONALITY AND CHARACTER

ROSS STAGNER
University of Akron

If we may judge the trend of current research from papers read at the convention of the American Psychological Association at Columbus in September, the chief development seems to be a shift away from tests and test procedures, and from statistical studies for the sheer sake of statistics. In place of this type of paper I observed more attempts to get at what seem to be fundamental considerations in the psychology of personality. These I have classified as specific studies of the learning process, the social matrix of personality, and the physiological basis of personality.

Some of the test material deserves consideration for reasons of originality of approach or thoroughness. Symonds reported on the use of pictures as a device for eliciting adolescent phantasies, a method which seemed to have some value. Lentz confirmed the opinion, perhaps first suggested by Thorndike but given broad statistical backing by Lundquist and Sletto in their recent monograph, *Personality in the Depression,* that the manner of framing questions is likely to skew our results markedly. Lentz's study indicates that there is a general tendency toward acquiescence, a sort of "yes-factor," which may markedly confuse the results of tests and attitude scales. The only method of elimination which is successful is to use a double-form test, presenting each item both positively and negatively.

Zubin reported on a "statistical approach to typology" which consisted of determining the number of individuals giving substantially identical response patterns on psychoneurotic inventory. While the term "typology" is questionable in this sense, his technique shows the possibility of finding persons who are "like-minded" within certain limits, who may then be studied more closely by other methods. Finally, I may mention the very careful factor analysis

of tests of "persistence" by Thornton and Guilford, which reveals the expected finding that "persistence" is just another cluster of more limited variables.

I think that the interest in learning materials relevant to what we are accustomed to label "personality" is distinctly a healthy sign. With our new skepticism regarding the validity of nonsense syllables and other devices as measures of "learning ability," it is important that we verify the manner and conditions of acquiring habits of personal behavior. Undoubtedly the most entertaining paper of the convention was Razran's demonstration that prejudices against Jewish, Italian, and Irish names can be reduced substantially by giving judges a free lunch while they looked at photographs bearing these names. Many of us have long suspected that what the Nazis need is more butter and less cannon!

Cook presented another of the series of papers by various investigators revealing the "experimental neurosis," this time in the white rat. Important in Cook's technique is the fact that he did not get the neurotic behavior unless all motor outlets other than that being conditioned were effectively closed. The relevance of this for Lewin's theory of substitute activities and the psychoanalytic concept of sublimation is obvious. To cite another animal study in this connection, I should like to mention Child's interesting observation that a monkey can learn not to take a given reward when the act punishes —not himself!—his cage-mates. This has only a faint analogy to taboo, but it underscores the scope and subtlety of the learning process in situations which involve social interactions.

Remmers and Whisler contribute another detailed study showing the power of instruction on "farm policies" to change the attitudes of junior high-school pupils. The change lasted for long periods of time. Exception: children of farmers, living at home, reacted negatively to education which opposed complete freedom for the individual farmer. Their scores moved antagonistically to those of the other students.

Finally, I think the study by Weld of opinion formation merits mention here. Presenting the evidence from a bigamy trial, installment fashion, he found that few student judges really had an impartial attitude at the beginning. Further, he noted that the opinion taken at the outset prejudiced the opinions formed as a result of testimony. When several installments were given successively from prosecution witnesses, the group judgment averaged in favor of con-

viction, but when this was balanced by defense material, the votes swung back toward acquittal. I am reminded of reading the diplomatic correspondence leading up to the World War, in which it was quite apparent that each diplomat started with certain preconceived notions, and while these were shifted back and forth within limits by events, they tended to balance at a point indicated by his preformed opinion. It would be healthy for judges, Secretaries of State, and others upon whose judgments weighty matters rest, to learn something of how they form their own attitudes.

A second group of studies related to the acquisition of personality traits, but were directed specifically to the question of social background. Two of these, by McKinney and Stott, served chiefly to confirm, with larger numbers of cases, the findings of previous investigators that home conditions in childhood and adolescence are directly reflected in emotional stability as tested in adolescence. McKinney's finding that economic worries seemed to be statistically less significant at the grade school age than at high school (though each gives more than 99 chances in 100 of a true difference) is interesting, because Gesell and Lord found with nursery school children that low economic status already constituted a substantial handicap to desirable personality development. It is possible that such handicaps operate long before they reach the level of consciousness.

An interesting relationship of attitude to income status and personal satisfaction was reported by Kornhauser. He found that as one goes down the income scale, both radicalism and personal dissatisfaction increase; and that, at least in the lowest economic group, dissatisfied individuals are no more radical than those claiming to be reasonably satisfied. But in the higher economic groups, persons feeling satisfied with their status in life become more conservative on matters of unionism, government ownership, etc., while dissatisfied subjects endorse reform or radical measures. Like Razran's study on free lunches, this one suggests that all the conservatives need to do is to see to it that everyone of voting age in the population is satisfied!

A new and appropriate technique was introduced by Caroline M. Tryon in studying the evaluations placed upon certain traits by boys and girls at different ages. This consisted of computing correlations between ratings of each trait and every other trait (twenty in all) and then grouping traits on the basis of correlation profile. It was fairly easy, in this manner, to break the twenty traits into a few

sub-groups and show that boys at twelve tend to value daring, leadership in games, and defiance of adult regulations, while they deprecate tidiness and marked conformity in the classroom. Many of us suspected this! Age changes from twelve to fifteen, and sex differences, give a framework in terms of which we can anticipate the direction of pressure from classmates upon a given child as he develops. In assessing the role of different factors in child development, it would be a serious error not to consider the personality type which is highly valued by the child's own age-sex group.

The last two studies I wish to mention in this group are those of White and Mowrer on democratic-autocratic group atmospheres. Working with entirely different kinds of children, each investigator concluded that democratic group management led to more individual initiative and less intra-group hostility. In each case one could not but be impressed by the similarity between our customary method of handling children in the home, in the public school and in the reform school, the experimentally defined "autocratic" atmosphere—and fascism.

As a final series of studies reflecting a new emphasis in personality study, I should like to comment on the increased interest in physiological measures, and on the materially improved techniques which are developing. Two studies, one by Rodnick, the other by Darrow and Solomon, dealt with autonomic responses. While both could have clarified manner of presentation and used statistical techniques to good advantage, it seemed clear that the total picture of autonomic activity is more differentiated than would be expected from the neurology we learned only a few years ago. Schizoid individuals appear to have definitely less reactivity than normals, and resistant patients show different autonomograms from co-operative patients, according to these investigations.

Endocrinology came into its own for the first time with animal and clinical studies giving fairly clear-cut evidence of the value of this approach. Miller's report on the therapeutic effect of injections of male hormone substance, testoterone proprionate, while dealing largely with pathological conditions of a physical nature, suggested that emotional states might be materially improved by glandular treatment, and this finding correlates with Sollenberger's observation of normal male hormone in adolescent boys. This latter study shows a satisfactory degree of relationship between hormone and social behavior. We should add in this connection the two interesting

papers by Sarah Anderson and E. E. Anderson, on glandular factors as related to timidity in the white rat. The latter found timidity to be reduced in the female during oestrum, while the former found meaningful (though small) correlations between glandular weight and measures of emotional reactivity. When we consider that the gross weight of the gland does not necessarily reveal the amount of functional tissue, it is clear that even these small correlations may be a good lead for further research.

Pointing from these papers to future investigations, we see two paths clearly outlined. One will deal with the biological basis of personality, the other with the acculturation of this physical mechanism. The individual can never escape his biological background (a fact some social psychologists are prone to forget), but the autonomic nervous system must learn to live in a culture (which the physiologists have not yet begun to reckon with). Apparently, every culture has its deviates, and glandular-autonomic studies of these cases are indicated. I am still of the opinion that physiology can set only certain wide limits upon personality, while, within the normal range of bodily functioning, cultural factors retain their supremacy as the major determinants of behavior.

BOOK REVIEWS

THE EGO AND THE MECHANISMS OF DEFENCE. By Anna Freud. No. 30 in the International Psychoanalytical Library. London: The Hogarth Press, 1937. x, 196 pp. with index. 9/–.

THE NEUROTIC PERSONALITY OF OUR TIME. By Karen Horney. London: Kegan Paul, Trench, Trubner, 1937. xii, 299 pp. with index. 12/–.

MENTAL CONFLICTS AND PERSONALITY. By Mandel Sherman. New York, London, Toronto: Longmans, Green, 1938. viii, 319 pp. with index. 12/6, $2.25.

Three writers here deal from differing points of view with the problem of the individual who is not at home in his environment.

Dr. Anna Freud's book has at once the clarity of her father's exposition and the limitations of his viewpoint. The first of its four sections is on the Theory of the Mechanisms of Defence. The ego in conflict uses mechanisms of defence. Neuroses arise when "some plan for defence has miscarried and the ego has suffered a defeat." Dr. Freud sets out in her remaining three sections to classify the "various defence mechanisms according to the specific anxiety-situations which call them into action."

These anxiety-situations, caused by the instincts, the affects of these instincts and the outside world, are taken in the order of their genetic development in the individual. The infantile ego, making every effort to achieve pleasure and avoid pain, reaches these ends by denial of objective reality and by means of phantasy in thought and action. When the development of the ego makes coexistence of opposites impossible, denial must be replaced by another defence mechanism—that of restriction of the ego—by avoiding painful objects. Such mechanisms combine in identification with the aggressor and in projection. The third section gives interesting clinical examples of these last two mechanisms.

In the final section the defences due to fear of the strength of the instincts are illustrated in the phenomena of puberty. The increase of libido now lays a special burden on the ego's defence mechanisms, and its tendencies at this time therefore present a well-defined picture for the study of the analyst.

Because of the nature of her assumptions Dr. Freud leaves the explicit account of anxiety-situations at puberty and presents what adult clinical material is mentioned in the book, mainly with reference to the developments of those defence mechanisms already mentioned. She has succeeded in giving us a clear statement of the psychoanalyst's views on the development of the neuroses. It must be counted an added virtue if her clarity has in some cases unintentionally shown that the Freudian boundaries must be revised.

With this revision Dr. Karen Horney is concerned. In *The Neurotic Personality of Our Time* she

sets out to present us with "some new interpretations for a number of basic problems in neuroses" which though referring to disparate questions have "a common basis in an emphasis on the determining role that anxiety plays in bringing about neurotic character trends."

The point of the qualifying phrase, in our time, in the title of her book, is to imply that "Freud's disregard of cultural factors not only leads to false generalizations, but to a large extent blocks our understanding of the real forces which motivate our attitudes and actions."

Dr. Horney holds strongly that the particular cultural environment in which he may find himself is of fundamental importance to the individual. She even goes so far as to agree with those sociologists who hold that there is no such thing as a normal psychology for all mankind. Although it is difficult to agree with the limited sense of psychology which this view makes necessary, one welcome result of such a social emphasis on the part of an avowed psychoanalyst, is a useful survey of the compatibilities of several psychoanalytic and sociological concepts.

Under such typical chapter headings as Cultural and Psychological Implications of Neuroses, The Neurotic Need for Affection, and Neurotic Competitiveness, Dr. Horney has achieved an account of the neuroses which avoids the Procrustean method as usually applied, both by the psychoanalyst to the social concepts and by some social psychologists to the biological concepts.

Her book contains sound observational work without premature theory, and if it is finally less convincing as a logical whole than the effort of Dr. Freud, this is largely because Dr. Horney's survey includes facts which, by the nature of their dogma, the orthodox Freudians must deny.

Dr. Sherman in his *Mental Conflicts and Personality* even more strongly emphasizes the social viewpoint with regard to the study of "the borderline mental disorders and of the neuroses."

"In a complex society conflicts are inevitable." This book is an excellent objective review of the research (mainly American) on the part played by these conflicts in the formation of the personality. After preliminary chapters on The Genesis and Nature of Conflicts and Attitudes and Conflicts which refer adequately to the viewpoints of McDougall, Knight Dunlap, and others, Dr. Sherman surveys the work on conflicts aroused by the necessity of readjustment to new cultures. America with her immigrants of many nations has provided much material for such investigations. Again her isolated mountain communities have afforded interesting confirmation of theories otherwise empirically untestable.

While the interrelation of conflicts and neuroses provides much of the subject matter of the whole book, a specific chapter headed "Conflicts and Neuroses" serves to differentiate the conflicts of the well-adjusted person and those of the neurotic. Our old friend, that "individual who is not at home in his environment" turns up in the guise of another terminology, and shows the reader yet another aspect of his many-sided countenance.

Here are three books, each competent in their own sphere, and each dealing to a considerable extent with the same subject. Is it only the cry of a disillusioned reviewer that the time has come to call a halt to this spate of five names where one might

better serve—or is there genuine need and the time really ripe, for an international council of psychological nomenclature?

H. KAUFMAN.
London University.

SCIENCE AND PSYCHICAL PHENOMENA. By G. N. M. Tyrrell. London: Methuen, 1938. xv, 379 pp. with appendix and index. 12/6.

Although the usually staid Messrs. Methuen have been unable to resist a sky-blue binding and a dust-cover remark to the effect that psychical research "constitutes today the main pathway to the understanding of the Human Individual," Mr. Tyrrell's book furnishes a fair account of psychic work in several fields during the past fifty years. Spontaneous and experimental extra-sensory perception each get useful chapters to themselves. A good survey of the theoretical implications of the subject is given under the heading of The Significance of the Evidence, and the book is completed with chapters on the mediumistic trance.

For serious readers the book is chiefly valuable in providing detailed source references to work on the many legitimate problems with which it deals.

H. KAUFMAN.
London University.

NATIONALISM AND THE COMMUNAL MIND. By E. Hanbury Hankin. London: Watts & Co., 1938. xii, 199 pp. 7/6.

This volume, a study of the origins of nationalism, aims to supply practical politicians with a program for escaping the present impasse in the armament race. Believing that we can ensure peace between civilized nations only by overcoming the bankruptcy of ideas of our political leaders, the author devotes the first eight chapters to a psychological study of the mental influences which come down to us from the past and mold our conduct. The remainder of the book deals with political matters and develops the need for a revision of our attitudes towards other nations.

The main thesis of the book is evolved out of a background of the study of the relations between national feeling and other compulsions, such as instincts and social customs. The author goes even further than McDougall in his speculations on the group mind and concludes that nationalism is a manifestation of a communal mind which is independent of the nervous systems of the individual human constituents. This super-individual mind, common to each species, is supposed to explain not only the transmission of persistent social customs, but is also invoked to explain bird migrations and other mass or group activities. The author recommends his conception to the attention of students of telepathy.

OLIVER L. REISER.
University of Pittsburgh.

THE REDISCOVERY OF MAN. By Henry C. Link. New York: Macmillan Company, 1938. 257 pp. $1.75.

In *The Rediscovery of Man* we have the sequel of the author's earlier *Return to Religion.* Here Dr. Link from his rich experience as a consulting psychologist adduces scores of illustrations to prove his thesis that man is not a mere machine doomed to function according to the make, but can determine his own destiny. The author appears to rebel against the behavioristic-environmentalist doctrines and reveals a skeptical attitude toward many hal-

lowed theories. The I. Q. constancy and the system of psychoanalysis come in for a drubbing as we are enjoined to free ourselves from the shackles of scientific fatalism.

Indeed, sometimes we wonder whether Link is not dissociating himself from the American plan and affiliating himself with the School of Klages, whom he doubtless would regard as a metaphysician, pure and simple. When, however, he tells us that the "fatalism of our times is not the fatalism of faith but the fatalism of despair; it is not the product of the spirit, but the creation of the mind," is he not presenting us with the salient teaching of Klages's *Der Geist als Widersacher der Seele?*

Naturally we do not expect to find a close relationship between an applied psychologist, in the strictest sense of the word, and an intuitive thinker like Klages. When Link begins to talk of building up techniques and habits, he is in the midst of a bouncing Americanism, after all. What separates him somewhat from the present-day American scene is his rugged individualism in a collectivist atmosphere. He wants every man to stand on his own feet and exhorts the youth of today to practice self-control, to court hardship, and to build character.

The particular conception of personality which Link has been sponsoring is familiar enough. Personality is not what a person possesses but what he does—in the vein of "handsome is that handsome does." Those who engage in sports, who are good joiners, who serve the community, have a high personality quotient. On the other hand, the introverts, the wallflowers, whose minds are introspective and analytic, or to use the Shakespearian phrase in *Hamlet* "sicklied o'er with a pale cast of thought" have according to Link a low personality quotient.

It is not difficult to discover Link's psychological pedigree. It is traceable to William James and his emphasis on the will. Action, energy, effort, constitute to the American pioneer the corner stone of psychology. While it is true that Link would not go so far as to believe in a *fiat* of the will, we can readily discern the bond which unites them both—the motor path. It was James who counselled his young readers to work at something every day which is distasteful in order to build up resistance; and that appears to be Link's advice too. What he is interested in is the well-rounded personality. It is the old idea *mens sana in corpore sano.*

Even the James-Lange view of emotions is reflected in Link's book. "Bad habits are not the results of repressed morbid complexes, rather the complexes are due to bad habits. The emotion does not determine the habit; rather as pointed out before, the habit determines the emotion" (p. 122).

Therein, of course, Link is no more nor less than a behaviorist. If habits change man from a minus to a plus quantity, all we need is to discover the necessary habits or techniques, and presto, we have a new personality. But Link has of late come to cultivate a sphere which is rather taboo in psychological circles, and in his appeal to religion as a supreme technique for the attainment of well-being, he diverges from the majority of his colleagues.

In the present book he takes another bold step toward the right when he states "The term soul, which I have been using without definition, has no scientific standing. Indeed no scientific definition of the soul is

possible. In my use of the term it refers to something synonymous with the highest value in the individual. I see the soul as a unique power which enables the individual to say 'I do not have to remain as I am, I can be something better. Hereditary influences may not have endowed me richly, but I can make much of what I have. Circumstances may be difficult, but instead of becoming their victim I shall rise above them. My reason may be inadequate but my faith can be strong. I have faith in my powers as a free-will agent, able to choose between right and wrong. I have faith in a moral and spiritual order higher than any comprehended by science or reason. By faith I can accept a super-human concept of personality which gives me confidence in my own potentialities. I will not accept defeat, I will struggle to achieve. I may fall but I will rise again. I may not win wealth, but I will win mastery over myself.'" This sounds a good deal like the so-called "affirmations" of the New Thoughters, and other representatives of pseudology, which may be defined as the vast body of organized ignorance.

Laboratory psychologists will probably shrug their shoulders at this outburst. Indeed, James's *fiat*, which I thought would scarcely be accepted by any but Thomist psychologists, is espoused in all its implications. Undoubtedly the reaction will be that the book comes under the head of Rotarian literature; and that the Y. M. C. A. organization should appreciate the propaganda which Link is unwittingly making for its programme. Some psychologists may go so far as to affirm that Bruce Barton could have written the same type of book, at least a number of the passages which are inspirational.

Yet it would be a mistake to consider Link a dispenser of Babbitry, an obscurantist, or a booster of religion. His attitude toward the experiments on telepathy shows us that we have still before us a hard-headed psychologist.

What Link has brought himself to admit is that such a thing as value not only exists but should be the mainspring of all our actions, of our whole being, that the purpose of life must precede the various steps taken by an individual to achieve anything. Certainly I must approve of such a position, although I am not at all sure that the specific habits which are prescribed are the most essential for the formation of a worth-while personality. While it is true that playing bridge, engaging in small talk, perhaps even smoking, makes for agreeableness and good fellowship, it may also be argued that life is too short; and the individual with a personality that is strong might wish to reduce the number of social but unproductive activities in order to engage in other activities which, in the long run, may mean a great deal more for society.

The Rediscovery of Man, significantly dedicated to the memory of Thomas Carlyle, whose life actually afforded the disproof of Link's conception of personality, is composed of twelve chapters headed "The Rediscovery of Man," "What is Psychology?", "The Psycho-Dynamics of Personality," "The Habits of Personality," "Overcoming Fears and Worries," "Machinists of the Soul," "Personal Security of Sportsmanship," "Gold Standards of Personality," "Slavery or Personality," "The Philosophy of Personality," "The Supreme Personality" (refer-

ring to Jesus), and an appendix describing in a few words the contents of eight books on psychology and psychiatry and the nature of the *Journal of Applied Psychology*. One wonders whether these are supposed to be the very best books to read.

A. A. ROBACK.

Cambridge, Massachusetts.

A SOCIAL PSYCHOLOGY OF SEX AND HUNGER. By A. E. Ayau. Cambridge, Mass.: Sci-Art, 1938. 160 pp. $2.10.

In this little book, the author sets himself the task of discussing the subject of sex and hunger, in their broadest senses, from a more or less Marxian, or at least leftist, angle, although he does not actually say so. The typical social basis to him is the relationship between two people of the opposite sex. A brief discussion deals with the difference between sociology and social psychology and with the social drawbacks of our time, which are too well known.

Personality and character involve not only desire and will but also education and ideology. It is ideology which counts much in the light of present-day conditions, perhaps more than at any other time.

The most valuable and interesting part of the book is the comparison by the help of carefully worked-out tables between the intelligence of an individual and his income expectancy. While we may not agree with him on some points, his conclusions are thought provoking, particularly because of the solid figures based on more or less accepted data. It is his opinion that luck is more of a determining factor than either personality traits or, more narrowly, intelligence.

In fact, we are told that the expectancy of a high income, let us say $15,000 a year, unless it is the result of inheritance, is infinitesimal in the case of an intelligence quotient upward of 150. The tables in this connection are both illuminating and challenging.

The author has, in line with the Terman school of intelligence testing, treated genius as a very high degree of intelligence, a view which most studies of genius find untenable. To assign intelligence quotients to Aristotle, Spinoza, and Kant and compare them accordingly, to my mind, is oversimplifying a creative aspect which cannot be quantified.

We are given to understand that many potential geniuses have not the opportunity for developing their hidden endowment in our present world order. This controversial question about the "mute inglorious Miltons" probably will never be settled satisfactorily. Thus far there is no evidence to show that Gray was justified in his imaginative presumption.

It is a pity that Mr. Ayau has not expanded his theses in relation to other views. He seems to ignore those who would oppose his theory, instead of pointing out their weaknesses. He sticks to his ideology too fixedly, and, one feels, deliberately excludes material which he regards unsound. His adherence, e.g., to the specificity school of personality as against the consistency view, while intelligible in the light of his general environmentalist position, is not accounted for with reference to experimental data.

A. A. ROBACK.

Cambridge, Massachusetts.

BOOKS RECEIVED

PSYCHOLOGICAL FOUNDATIONS OF PERSONALITY. By Louis P. Thorpe. New York: McGraw-Hill Book Company, 1938. xvi, 602 pp. with indices. $3.50.

COLLECTIVE BEHAVIOR. By Richard T. LaPiere. New York: McGraw-Hill Book Company, 1938. xiii, 577 pp. with indices. $4.00.

THE CONCEPTUAL REPRESENTATION AND THE MEASUREMENT OF PSYCHOLOGICAL FORCES. By Kurt Lewin. Contributions to Psychological Theory, 1938. Vol. I, 4. 247 pp. with indices. $2.00.

SCIENTISTS ARE HUMAN. By David Lindsay Watson. London: Watts & Co., 1938. xx, 249 pp. with index. 7/6.

A VISUAL MOTOR GESTALT TEST AND ITS CLINICAL USE. By Lauretta Bender. Research Monographs No. 3. New York: The American Orthopsychiatric Association, 1838. vii, 176 pp. with index.

CO-OPERATION AND COMPETITION AMONG PRIMITIVE PEOPLES. By Margaret Mead. New York: McGraw-Hill Book Company, 1938. xii, 531 pp. with index. $4.00.

PSYCHOLOGY IN EVERYDAY LIFE. By Walter C. Varnum. New York: McGraw-Hill Book Company, 1938. xii, 444 pp. with indices. $2.75.

WUNSCH UND PFLICHT IM AUFBAU DES MENSCHLICHEN LEBENS. By Else Frenkel and Edith Weisskopf. Psychologische Forschungen über den Lebenslauf. Wien: Gerold & Co., 1937. 163 pp.

PSYCHOLOGICAL FACTORS IN MARITAL HAPPINESS. By Lewis M. Terman. New York: McGraw-Hill Book Co., 1938. xiv, 474 pp. with indices. $4.00.

PRIMITIVE BEHAVIOR. By William I. Thomas. New York: McGraw-Hill Book Company, 1938. ix, 847 pp. with indices. $5.00.

CONTRIBUTI DEL LABORATORIO DI PSICOLOGIA. Milan: Pubblicazioni della Universita Cattolica del Sacro Cuore, 1938. 261 pp.

THE PSYCHOLOGY OF A GROWING PERSONALITY. By F. M. Gregg. Lincoln: The Personality Press, 1938. xv, 489 pp., illustrated. $2.50.

GRAPHOLOGIA. Sonderheft Tiefenpsychologie und Graphologie. Neue Folge der "Schrift." Prag: Dr. Arthur Werner, 1938. 68 pp., illustrated. 1/2.

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